STRATEGIC INFORMATION SYSTEMS PLANNING (SISP) IN THE BANKING SECTOR

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An Investigation of Strategic Information Systems Planning (SISP) in the Saudi Banking Sector

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ABSTRACT

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The improvement of SISP practices has rapidly become one of the most critical issues facing many organisations, including banks. Globally, the banking sectors, including the Saudi one, have developed and implemented many IS strategies. Several systems have been executed to support the countries' economies which have benefited from the increased trading resulting from the greater flexibility in time and costs associated with banking transactions. To continue these achievements and to improve SISP processes, several factors require careful investigation based on their relationship to SISP success; which include SISP objectives, SISP internal factors, external consultant functions, SISP external factors, measurements of SISP success, key stakeholders' roles, and triggers. Therefore this study investigates the impact of these factors on SISP success. Data were collected in three phases. Phase 1 was an initial study with one or two interviews with the IT directors of each bank in the Saudi banking sector comprising the central bank and 11 commercial banks. The outcomes informed the development of a survey that was used in Phase 2; to investigate a sample containing a central bank, a domestic commercial bank and a domestic-foreign commercial bank to determine their SISP processes. 157 completed questionnaires were returned from the bank executives, business and IT directors and consultants. In Phase 3, 57 interviews confirmed and explained the quantitative results from Phase 2. Therefore, an in-depth case study was made in the three banks during Phases 2 and 3. The research results support previous findings on the SISP's seventeen objectives collected by several researchers across different industries and in various countries. Furthermore, the research condenses these seventeen objectives into five more practical and achievable objectives for the banking sector. These are: 1) planning and deployment of information systems; 2) leading organisation changes; 3) improving stakeholders' involvement and communication; 4) achieving the strategic priorities; and 5) alignment of organisational policies and architecture for business and IS. In addition, the findings identify the factors according to their relationship with SISP success and therefore explore several elements with positive, negative or no impact on SISP success in the banking sector. The thesis presents conclusions and suggests areas for further research.

Keywords: Strategic Information Systems Planning (SISP); Banking Sector; SISP Objectives; SISP Internal Contextual Factors; External Consultant Functions; SISP Stakeholders' Roles; SISP External Contextual Factors; SISP Triggers; Saudi Arabia.

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CHAPTER 1
Introduction

1.1 Background

The pervasive nature of IS in today's organisations coupled with increased pressure to leverage technology assets has dramatically increased the importance of strategic information systems planning (Bechor et al., 2010). Strategic information systems planning (SISP) is an important management function (Basu et al., 2002). It is among the highest ranked issues on management agendas for many years (Luftman et al., 2006). Through it, organisations establish effective long-term use of IS and ensure their support of organisational objectives (Cohen, 2008). For many IS executives, SISP continues to be a critical issue (Earl, 1993) and is reportedly the top IS concern for chief executives (Moynihan, 1990). At the same time, it is agreed that IS management could be based on SISP (Synott and Gruber, 1982). Investments in information technology (IT) have been promoted in order to support business strategy and create strategic options (Earl, 1988); concurrently, an 'industry' of SISP has grown with IT manufacturers, researchers and management consultants developing different methodologies and techniques (Earl, 1993) and external consultants are very valuable as a source of information about SISP (Lederer and Sethi, 1996). SISP processes were described in terms of five phases; strategic awareness, a situation analysis, strategy conception, strategy formulation, and strategy implementation planning (Newkirk and Lederer, 2006). SISP is not merely a creative process but also a process of interactive learning involving multiple participants and stakeholders (Reponen, 1993). Researchers have shown that top management support is extremely important for successful IS

planning (Philip, 2007). SISP triggers have been developed and tested in companies from a variety of industries (CIO Communications and ICEX, 1997).

Several researchers have identified SISP objectives. For instance, SISP is conducted to facilitate the management and control of IT resources (Boynton and Zmud, 1987; Carter et al., 1990; Green, 1991) which includes allocating IT resources (Selig, 1991) and forecasting IT resource requirements (Gottschalk, 1999b). SISP can also be used with the objective of gaining top management commitment to IT (Earl, 1993) and improving communication about IT with the users (Galliers, 1987; Gottschalk, 1999b). Therefore a SISP objective could be to raise the visibility of IT in the organisation (Selig, 1991). SISP could also be executed with the objective of assisting an organisation to gain competitive advantage (Hartog and Herbert, 1985; Hochstrasser and Griffiths, 1990; Kettinger et al., 1994). In that regard, it could be used to help align the IS with the business needs (King, 1978; Reich and Benbasat, 1996; Teo, 1994) and to identify new and higher payback applications (Galliers, 1987; Moynihan, 1990). It could also help define new business strategies (Porter, 1985) and identify strategic applications (Earl, 1993; Flynn and Goleniewska, 1993; Sullivan, 1985) as well as technological policies and architecture (Earl, 1993; Sullivan, 1985). SISP success can be measured by the fulfilment of these objectives (Venkatraman and Ramanujam, 1987).

The benefits of SISP cannot be reduced to simple financial measures such as return on investment, payback or internal rate of return (Segars and Grover, 1998: Sugumaran and Arogyaswamy, 2004). This is because SISP, like strategic business planning, produces many difficult-to-assess benefits (King, 1988: King and Graver, 1991); therefore the

measuring of SISP success is complex and needs to consider these intangibles (Newkirk and Lederer, 2007).

It is therefore not surprising that corporate general managers and IS executives have, for some time, considered the improvement of SISP to be a key issue (Brancheau et al., 1989, Champy, 1993; Niederman et al., 1991). It is perhaps also not surprising that the chief executives have identified SISP as their highest IS concern (Brancheau et al., 1996). SISP has been examined in different countries across both the eastern and western world (Earl, 1993; Teo et al., 1997; Gottschalk, 1999a; Kunnathur, and Shi, 2001; Spremic and Strugar, 2002; Wang and Tai, 2003; Long et al., 2003; Mohdzain and Ward, 2007; Hanafizadeh, et al., 2008; Newkirk et al., 2008; Choi and Bae, 2009; Johnson and Lederer, 2010)

1.2 Research Objectives

The objectives of the current research were formulated by looking at SISP from a historical perspective, by paying attention to the purpose, the process and the content of SISP and by looking at the contextual factors involved in SISP in the case study organisations. So, the objectives are to:

1. Identify SISP objectives in the banking sector.
2. Investigate the internal and external contextual factors affecting SISP in the banking sector.
3. Examine the functions of the external consultant in SISP in the banking sector.
4. Determine the measurements of SISP success in the banking sector.
5. Explore the key stakeholder roles which impact on SISP in the banking sector.
6. Identify SISP triggers in the banking sector.

1.3 Research Questions

The main research question is:

How can the process of Strategic Information Systems Planning (SISP) be improved to achieve success in the banking sector?

In order to answer this question, the following eight sub-questions (RQ) need to be answered:

RQ1: What are the SISP objectives in the banking sector?

RQ2: What are the main elements of SISP objectives in the banking sector which, when achieved, influence the success of SISP?

RQ3: What are the main elements, the internal contextual factors of SISP, which affect the success of SISP in the banking sector?

RQ4: What are the main functions of the external consultant's impact on the success of SISP in the banking sector?

RQ5: What are the main elements, in terms of the external contextual factors, of SISP which influence its success in the banking sector?

RQ6: Which internal and external measurements of SISP impact on its success when utilised in the banking sector?

RQ7: Which key stakeholder roles (initiating, leading, involving, spending time and exerting power) impact on the success of SISP in the banking sector?

RQ8: Which SISP triggers impact on the success of SISP in the banking sector?

1.4 Research Context

Research confined to one country and one industry would decrease the potential for cultural, political and legal differences which would appear in any multi-country study (Jacoby, 1995). However, a systematic study of several companies within one industry

could provide important insights into why some companies use IT more successfully than others (Benbasat et al., 1987). The current research therefore focuses on one industry in one country, the banking industry in Saudi Arabia, which is leading in using technology and is very experienced in using global communication networks.

The research concentrates on the banking sector, which has participated in strategic information systems planning (SISP) for its payment systems, and includes the Saudi Arabian Monetary Agency (SAMA), the central bank of Saudi Arabia and 11 commercial banks.

The current research started with an initial study which interviewed two IT directors from SAMA and an IT director from each of the 11 commercial banks. It was then decided to work with a sample containing a central bank, a domestic commercial bank and a domestic-foreign commercial bank. The main reason for selecting the groups was to provide a better representation when exploring the common practices of their SISP and when relating their experiences with the success of SISP.

The bank executives, business and IT directors and consultants from these three banks were the participants in this study, as were the main stakeholders of SISP in the banking sector.

1.5 Research Significance

The current body of literature has discussed the use of SISP in many industries but little attention has been given to the use of SISP in just one industry such as the banking sector. Also, SISP is ‘a theory developed by westerners’ and it has been introduced in many countries including Arab countries but the literature that presented SISP in Saudi

Arabia is little. Furthermore, the impact that external consultants have on SISP has not been widely researched, despite these consultants' being of great value as a source of information. Additionally, there is limited research available regarding: the effects of external contextual factors on the success of SISP; the impact of organisational factors on the success of SISP; the SISP triggers; and there is very little consideration of the roles of SISP stakeholders. This research will therefore address the gaps in the current literature by: (i) studying SISP in the Saudi Arabian banking industry; (ii) identifying the impact of Saudi Arabian culture on the success of SISP; (iii) exploring the impact of the external consultants on the success of SISP; and (iv) investigating the influence of contextual factors, organisational factors, stakeholders and SISP triggers on the success of SISP.

1.6 Research Structure

This thesis consists of eight chapters (see Figure 1.1). The first chapter presents the introduction which describes: the objectives of the study; the main proposed research question and its eight sub-questions (RQ); the research context; the research significance; and finally, the research structure.

The second chapter then reviews the theoretical and empirical research relating to: strategic information systems planning (SISP); SISP objectives; SISP internal contextual factors; external consultant functions; SISP external contextual factors; measurements of SISP success; the key stakeholders' roles; and finally SISP triggers.

The third chapter reviews selected external contextual factors in relation to: SISP in the Saudi banking sector; counting the national culture; related government and public organisations; connected international institutions; linked competitors and partners of the banking sector. It also presents an overview of the Saudi banking sector and focuses on: its significance to the nation's economy; the importance of information technology to this sector and strategic planning capabilities needed for information systems to develop; and finally, the implementation of the country's payment systems.

The fourth chapter provides the methodology and design of the research. It discusses the research philosophies; research approaches; research strategies; and the specific data collection and data analysis methods employed in this study. Additionally, the processes involved in developing the questionnaire and interviews are explained. Finally, the chapter discusses the reliability and validity of the data and any identified ethical issues.

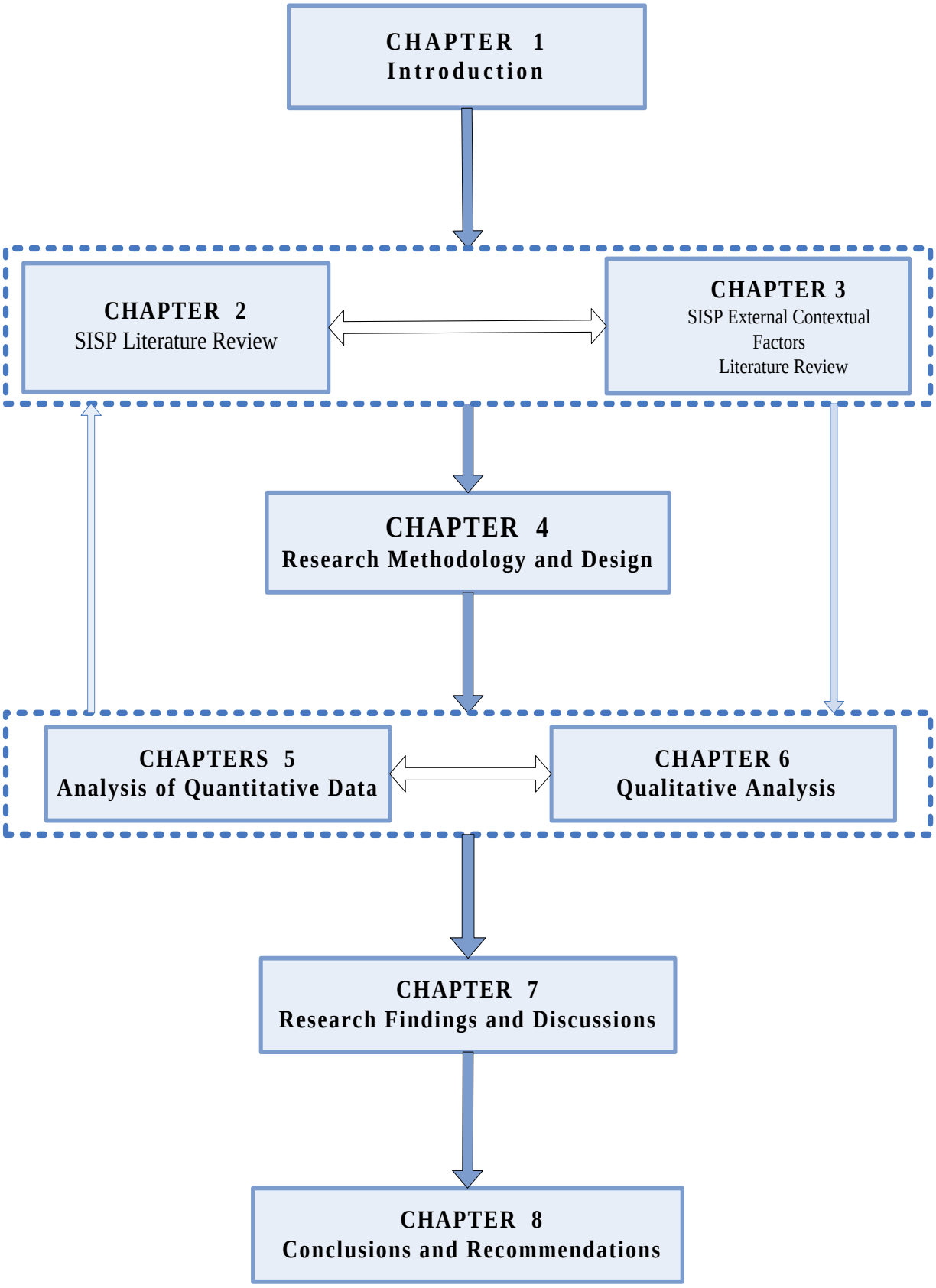
The fifth chapter addresses the quantitative data analyses. It describes the analysis which includes the demographics; data preparation and purification of measures; and the SISP objectives in the banking sector. It concentrates on presenting and discussing a range of statistical analyses generated as the basis for understanding the characteristics and SISP experiences of the responding banks This chapter also concentrates on presenting and discussing a range of statistical analyses generated as the basis for understanding the characteristics and IS planning experiences of the responding banks to answer the main research question by answering its eight sub-questions (RQ1 to RQ8),

The sixth chapter confirms and explains the results of the quantitative data analysis from Chapter 5, in order to answer the main research question and its eight research sub-questions.

The seventh chapter interprets and discusses the findings generated from the results of the quantitative analysis in Chapter 5 and the qualitative analysis in Chapter 6. It reviews these findings alongside previous related work from the field of SISP.

Finally, the eighth chapter provides the research conclusions. It summarises the research processes and outcomes in relation to the specified research questions. The chapter progresses by describing the implications and limitations of the present study and then provides suggestions for future research. Contributions are also outlined at the end of this thesis.

Figure 1.1: Research Structure



CHAPTER 2
Strategic Information Systems Planning (SISP) Literature Review

2.1 Introduction

The aim of this chapter is to discuss the main issues relating to the definitions, the evolutions and the development of strategy, strategic planning and strategic information systems planning (SISP). In addition, it provides an overview of different SISP methodologies, SISP experiences in several countries and SISP practices in the financial services industry. It presents in details SISP process, SISP success, SISP objectives, SISP internal contextual factors, SISP external consultant functions, SISP success measurements, SISP key stakeholders roles and different SISP triggers. It also discusses some recent research in the field, and evaluates the most state of the art theories. For this purpose, the chapter is organised as follows: firstly, strategy and strategic planning will be discussed and then the following sections examine in turn the effects of information technology (IT) on strategy and SISP. Finally, there is a chapter summary.

2.2 Strategy and Strategic Planning

Behind every successful organisation is a superior strategy which the organisation may have developed through formal analysis, trial and error, intuition or even pure luck. No matter how it has developed, it is the strategy that underpins the success of the organisation (Markides, 1999). To understand corporate success, it is firstly important to understand the logic of successful strategies. Therefore the following Sections 2.2.1 to 2.2.4 will discuss strategy definitions, the evolution of strategy, dimensions of strategy and criteria for effective strategy.

2.2.1 Strategy Definitions

Human nature insists on a definition for every concept; however, the word strategy has long been used implicitly, in various ways, even if it has been defined in only one way. Obviously, recognition of multiple definitions can assist people to manoeuvre through and understand this difficult field. Accordingly, several definitions of strategy are presented here. For example, *The Concise Oxford Dictionary* (1995) focuses on the military background of the word strategy by stating that strategy is *"The art of war; the management of an army or armies in a campaign; the art of moving troops, ships, aircraft, etc. into favourable positions: an instance of this or a plan formed according to it; a plan of action or policy in business or politics, etc.*". *Webster's New World Dictionary* (1992) defines a strategy as *"a skill in managing or planning"*.

In business and management dictionaries, *The IEBM Dictionary of Business and Management* (1992) describes strategy as *"a planned approach to the achievement of long-term goals, including the activities a firm will undertake, the resources it will require, the markets where it will do business and so on"*. Furthermore, *The Collins Dictionary of Business* (1995) defines strategy as *"a unified set of plans and actions designed to secure the achievement of the basic objectives of a business or some other organisation. Business objectives represent the goals of the organisation, i.e. the economic (and social) purpose for which the business exists; strategy is the means used to attain these goals"*.

According to early scholars in this field, including Andrews (1971), strategy is a rational decision-making process by which the organisation's resources are matched with opportunities arising from the competitive environment. Strategy is the primary means of reaching the focal objective, which is whatever objective is in mind at a

specific moment. Strictly speaking, it is literally meaningless to talk about strategy without having an objective in mind. Viewed in this context, strategy becomes an integral part of the ends-means hierarchy (Thorelli, 1977). Strategy is the direction and scope of an organisation over the long term. It ideally matches its resources to its changing environments and, in particular, its markets, customers or clients, so as to meet stakeholder expectations (Johnson and Scholes, 1993). Quinn (1980) describes strategy as the pattern or plan that integrates an organisation's major goals, policies and action sequences into a cohesive whole. A well-formulated strategy helps to marshal and allocate an organisation's resources into a unique and viable position based on its relative internal competencies and shortcomings, anticipated changes in the environment and contingent moves by intelligent opponents (Quinn, 1980).

Mintzberg (1987) presents the '5 Ps' definition of the dimensions of strategy, which includes plan, ploy, pattern, position and perspective. Strategy is a plan and involves a kind of consciously intended course of action, a guideline (or set of guidelines) to deal with a situation. As he explains, a child has a 'strategy' to get over a fence; a corporation has a strategy to capture a market. By this definition, strategies have two essential characteristics: they are made in advance of the actions to which they apply and are developed consciously and purposefully. As a plan, a strategy can also be a ploy too, really just a specific 'manoeuvre' intended to outwit an opponent or competitor. The child may use the fence as a ploy to draw a bully into his yard, where his Doberman Pinscher awaits the intruder. Likewise, a corporation may threaten to expand a plant's capacity to discourage a competitor from building a new plant. Here the real strategy (the real intention) is the threat, not the expansion itself, and as such is a ploy; however, if the strategy is intended (whether as a general plan or a specific ploy), it will surely also be realised. In other words, defining strategy as a plan is not sufficient; a definition

is also needed that encompasses the resulting behaviour. A third definition is therefore proposed: strategy is a pattern; more specifically it is a pattern in a stream of actions (Mintzberg and Waters, 1985). By this definition, when Picasso chose to paint in blue for a period, that was a strategy; just as the behaviour of the Ford Motor Company was, when Henry Ford only offered his Model T in the colour black. In other words, by this definition, strategy is consistency in behaviour, whether or not this is intended. Mintzberg's fourth definition is that strategy is a position; specifically, a means of locating an organisation in what organisational theorists call 'an environment'. By this definition, strategy becomes the mediating force between the organisation and the environment, that is, between the internal and the external context. While this fourth definition of strategy looks out, seeking to locate the organisation in the external environment by its concrete position, the fifth looks inside the organisation, inside the heads of the collective strategists as well as at the broader view. Here, strategy is perspective; its content consists not just of a chosen position but also of an ingrained way of perceiving the world. There are organisations that favour marketing and the building of a whole ideology around that, such as IBM; Hewlett Packard has developed the 'HP way', based on its engineering culture; McDonald's has become famous for its emphasis on 'quality, service, cleanliness and value' (Mintzberg, 1987).

Hussey (1999) emphasises the links between strategy, strategic planning and strategy management. He sees strategy as the means by which an organisation moves to attain its long-term aims and strategic planning is the detailed specification of both the long-term aims and the strategy developed for achieving them. Strategy management is the process by which the long-term aims, the strategy and its implementation are managed: it is thus as much concerned with the human aspects of management as it is with markets, factories and finance.

These three concepts are therefore intricately bound together. For example, a strategy which is formulated without any thought about how it can be implemented is unlikely to succeed. Strategic planning is more than just writing down the strategy; it should give consideration to the culture, structure and systems in the organisation, so that every element of the organisation can be mobilised to make the strategy effective. Strategic management encompasses both strategy and strategic planning, but means something more: it is the way in which strategy becomes the driving force of the organisation. A key element, if a strategy is to be effective, is its long-term view. This does not mean that a strategy should be expected to last for ever but it does mean that every strategy should move the organisation towards its long-term aims and that the organisation should be in a better position to achieve these aims at the point where a strategy has to be fundamentally changed, or even abandoned (Hussey, 1999).

2.2.2 The Evolution of Strategy

Around 320 BC, a Chinese military strategist, Sun Tzu, wrote *The Art of War* (Sun Tzu, 1990). This work is said to have influenced the thinking of many modern businesses and has led to a number of thoughts about how the 'art' can be applied to modern business (Ho, 1997).

Many of the concepts that form the basis of today's current understanding of strategy development were formulated during the first half of the 20th century. Examples include Frederick Taylor's work on efficiency, including the rapid growth of forecasting and measurement techniques during the 1930s and the development of organisational structures and transformations from production to demand-driven organisations, after the Second World War (Feurer and Chaharbghi, 1995).

Newman (1951) was the first to demonstrate the nature and importance of strategy. His work was soon expanded by others; in the early 1960s, Andrews and Christiansen

(1965) and Ansoff (1965) laid the foundations for strategic planning by demonstrating the need to match business opportunities with organisational resources and by illustrating the usefulness of strategic plans. This early phase was followed by a phase of generalisation in which researchers attempted to identify common patterns of success. These studies culminated in the development of a large number of strategic tools and frameworks that are still used today for analysis purposes. In the 1980s, the focus shifted from strategic planning towards strategic management (Schendel and Hofer, 1979). Led by Porter (1980, 1985), a broad range of concepts and techniques evolved which were aimed at building and sustaining competitive advantage by anticipating and exploiting business opportunities. In parallel, increasing attention was given to the issue of strategy implementation. Major contributions resulted from work carried out on strategy implementation during this time; they included 'the value chain concept' (Porter, 1985) and 'McKinsey's 7S-framework': strategy, skills, shared values, structure, systems, staff and style (McKinsey & Company, 1986). These works helped in developing an understanding of internal issues that need to be addressed in order to achieve the organisation's goals.

Hamel and Prahalad (1989) presented a view of the role of management consistent with the military analogy of strategy. The challenge of building global leadership, according to them, is to embed the ambition for such leadership throughout the organisation and to create 'an obsession with winning', which will energise the collective action of all the employees. This obsession is termed 'strategy intent'. The managers need to use their role to build such an ambition by helping people to develop faith in their own abilities to deliver on tough goals, motivating them to do so and by channelling their energies into a step-by-step progression that they compare with 'running the marathon in 400-metre sprints'. Strategic intent involves envisaging a desired leadership position and establishing the criterion that the organisation will use to chart its products and

progress. Canon sought to 'Beat Xerox', Honda strove to become a second Ford, an automotive pioneer; these are all expressions of strategic intent.

The popularity of the 'resource-based view' (RBV) of strategic management is manifested in its rapid diffusion throughout strategy literature. Proponents of the RBV assert that if a firm's attribute is rare and valuable, then that attribute is a resource that can give the firm competitive advantage. Furthermore, if the resource that provides the firm's competitive advantage is hard to imitate and is not substitutable, then that resource can provide the firm with sustainable competitive advantage (Barney, 1991).

Barney (2001) defines competitive advantage in two ways. Firstly, a firm's competitive advantage can be defined with respect to the actions of other firms, either current or potential competitors. In this approach, a firm is said to have a competitive advantage when it is engaging in activities that increase its efficiency or effectiveness in ways that competing firms are not, regardless of whether those other firms are in a particular firm's industry. Secondly, a firm's competitive advantage can be defined with respect to the return expectations of that firm's owners. Stockholders, as residual claimants, develop expectations about the returns a firm will generate. In this definitional approach, firms that generate higher returns than were expected by stockholders, at constant levels of risk, have a competitive advantage.

The resource-based theory includes a very simple view about how resources are connected to the strategies a firm pursues. Once a firm becomes aware of the 'valuable, rare, costly to imitate, and none substitutable resources it controls', it is self-evident that the firm should take appropriate actions to exploit these resources. This is certainly true some of the time, for example when a firm possesses valuable, rare, costly to imitate, and non substitutable economies of scale, learning curve economies, access to low-cost factors of production and technological resources, it is clear that the firm should pursue a cost leadership strategy (Barney, 1997).

Mintzberg and Lampel (1999) briefly review the evolution of this field, in terms of what they name ten schools of strategies; these ten schools are highlighted in Table 2.1 (Part A) and Table 2.2 (Part B).

Table 2.1: Dimensions of Ten Schools of Strategies (Part A)

	Design	Planning	Positioning	Entrepreneurial	Cognitive
Sources	P. Selznick (and perhaps earlier work, for example: W.H. Newman), and then K. R. Andrews.	H. I. Ansoff.	Purdue University work (D. E. Schendel, K. J. Hatten), and then notably M. E. Porter.	J. A. Schumpeter, A. H. Cole, and others in economics.	H. A. Simon and J. G. March.
Base Discipline	None (architecture as a metaphor).	Some links to urban planning, systems theory and cybernetics.	Economics (industrial organisation) and military history.	None (although early writings come from economists).	Psychology (cognitive).
Champions	Case study teachers (especially at or from Harvard University), leadership aficionados - especially in the US.	Professional managers, MBAs, staff, experts (especially in finance), consultants and government controllers - especially in France and the US.	As in the planning school, particularly analytical staff types, consulting 'boutiques', and military writers - especially in the US.	Popular business press, individualists, small business people everywhere, but most decidedly overseas among the Latin Americans and the Chinese.	Those with psychological bent - pessimists in one wing and optimists in the other.
Intended Message	Fit.	Formalise.	Analyse.	Envision.	Cope or create.
Realised Message	Think (strategy making as case study).	Programme (rather than formulate).	Calculate (rather than create or commit).	Centralise (then hope).	Worry (being unable to cope in either case).
School Category	Prescriptive.	Prescriptive.	Prescriptive.	Descriptive (some prescriptive).	Descriptive.
Associated Homily	'Look before you leap.'	'A stitch in time saves nine.'	'Nothin' 'but the facts, ma'am.'	'Take us to your leader.'	'I'll see it when I believe it.'

Table 2.2: Dimensions of Ten Schools of Strategies (Part B)

	Learning	Power	Cultural	Environmental	Configuration
Sources	C. E. Lindblom, R. M. Cyert and J. G. March; K. E. Weick, J. B. Quinn, and C. K. Prahalad; and G. Hamel.	G. T. Allison (micro), J. Peffer and G. R. Salancik; and W. G. Astley (macro).	E. Rhenman and R. Normann in Sweden. No obvious source elsewhere.	M. T. Hannan and J. Freeman. Contingency theorists (e.g. D. S. Pugh et al.).	A. D. Chandler, McGill University group (H. Mintzberg, D. Miller and others); R. E. Miles and C. C. Snow.
Base Discipline	None (perhaps some peripheral links to learning theory in psychology and education; and chaos theory in mathematics).	Political science.	Anthropology.	Biology.	History.
Champions	People inclined to experimentation, ambiguity, adaptability - especially in Japan and Scandinavia.	People who like power, politics, and conspiracy - especially in France.	People who like the social, the spiritual, the collective - especially in Scandinavia and Japan.	Population ecologists, some organisation theorists, splitters, and positivists in general especially in the Anglo-Saxon countries.	Lumpers and integrators in general, as well as change agents. Configuration perhaps most popular in the Netherlands. Transformation most popular in the US.
Intended Message	Learn.	Promote.	Coalesce.	React.	Integrate, transform.
Realised Message	Play (rather than pursue).	Hoard (rather than share).	Perpetuate (rather than change).	Capitulate (rather than confront).	Lump (rather than split, adapt).
School Category	Descriptive.	Descriptive.	Descriptive.	Descriptive.	Descriptive and prescriptive.
Associated Homily	'If at first you don't succeed, try, try and try again.'	'Look out for number one.'	'An apple never falls far from the tree.'	'It all depends.'	'To everything there is a season…'

Source: Mintzberg and Lampel (1999)

2.2.3 Dimensions of Strategy

The analysis of different strategies provides some essential insights into the basic dimensions, nature and design of formal strategies. Quinn (1980) explains the dimensions of strategies as follow: firstly, effective formal strategies contain three

essential elements: (1) the most important goals (or objectives) needing to be achieved, (2) the most significant policies guiding or limiting actions and (3) the major action sequences (or programmes) that are to accomplish the defined goals within the limits set. Since the strategy determines the overall direction and action focus of the organisation, its formulation cannot be regarded as the mere generation and alignment of programmes to meet the predetermined goals. Consequently, goal development is an integral part of strategy formulation.

Secondly, effective strategies develop around a number of key concepts and thrusts, which give them cohesion, balance and focus. Some thrusts are temporary, while others are continued through to the end of the strategy. Some cost more, per unit gain, than others. Yet resources must be allocated in patterns that provide sufficient resources for each thrust to succeed regardless of its relative cost/gain ratio. Furthermore, organisational units must be coordinated and their subsequent actions controlled, in order to support the intended thrust pattern, otherwise the total strategy will fail. Third, the strategy deals not just with the unpredictable but also with the unknowable. For major enterprise strategies, analysts are unable to predict the precise ways in which all impinging forces could interact with each other, be distorted by nature or human emotions or be modified by the imaginations and purposeful counteractions of intelligent opponents (Braybrooke and Lindblom, 1963). Many have noted how large-scale systems can actually respond quite counter-intuitively (Forrester, 1971) to apparently rational actions or how a seemingly bizarre series of events can conspire to prevent or assist success (Lindblom, 1959; White, 1978). Consequently, the essence of strategy is to build a posture that is so strong (and potentially flexible) in selective ways

that the organisation can achieve its goals despite the unforeseeable ways in which the external forces may actually interact when the time comes.

Fourth, organisations are multifaceted and should have multiple echelons of grand, theatre areas, infantry and artillery strategies, as should the other complex organisations which have a number of hierarchically related and mutually supporting strategies (Vancil and Lorange, 1975; Vancil, 1976). Each such strategy must be, more or less, complete in itself in order to be congruent with the level of decentralisation intended. Yet each must be shaped as a cohesive element of higher-level strategies (Quinn, 1980).

2.2.4 Criteria for Effective Strategy

In order to create a strategy capable of dealing with the unknowable, it is important to identify which factors should be considered. Although each strategic situation is unique, are there in fact certain common criteria that tend to define a good strategy? A strategy, worked in retrospect, is not a sufficient criterion for judging a strategy, however, some guidelines are clearly needed in order to define an effective strategic structure (Quinn, 1980). A few studies have suggested some initial criteria for evaluating a strategy (Tilles, 1963; Christensen et al., 1978). These focus on its clarity, motivational impact, internal consistency, compatibility with the environment, appropriateness in light of the resources, degree of risk, match to the personal values of key figures, time horizon and also its workability. According to Quinn (1980, 1998) historical examples, from both business and military-diplomatic settings, suggest that effective strategies should as a minimum encompass certain critical factors and structural elements. The following seven elements are determined as critical factors for strategy, whether in business, government or warfare (Quinn, 1980; 1998).

1) Clear, decisive objectives. Are all the efforts directed towards clearly understood, decisive and attainable overall goals? Specific goals of subordinate units may change in the heat of a campaign or competition, but the overriding goals of the strategy, for all units, must remain clear enough to provide continuity and cohesion for tactical choices during the time horizon of the strategy. All goals need not be written down or numerically precise, but they must be understood and be decisive – that is, if they are achieved, they should ensure the continued viability and vitality of the entity against its opponents.

2) Maintaining the initiative. Does the strategy preserve freedom of action and enhance commitment? Does it set the pace and determine the course of events rather than reacting to them? A prolonged reactive posture fuels unrest, lowers morale and surrenders the advantage of timing and intangibles to the opponents. Ultimately, such a position increases costs, decreases the number of options available and lowers the probability of achieving sufficient success to ensure independence and continuity.

3) Concentration. Does the strategy concentrate superior power at the place and time that is likely to be decisive? Has the strategy defined precisely what will make the enterprise superior in power – that is, 'best' in critical dimensions – in relation to its opponents? A distinctive competency yields greater success with fewer resources and is the essential basis for higher gains (or profits) over the competitors.

4) Flexibility. Has the strategy purposely encompassed resource buffers and dimensions for flexibility and manoeuvrability? Reserved capabilities, planned manoeuvrability and repositioning allow one to use minimum resources while keeping opponents at a relative

disadvantage. As corollaries of concentration and concession develop, they permit the strategist to re-use the same forces to overwhelm selected positions at different times. They also force less flexible opponents to use more resources to hold predetermined positions, while simultaneously requiring minimum fixed commitment of one's own resources for defensive purposes.

5) Coordinated and committed leadership. Does the strategy provide responsible, committed leadership for each of its major goals? Leaders must be so chosen and motivated in a way to ensure that their own interests and values match the needs of their role. Successful strategies require commitment, not just acceptance.

6) Surprise. Has the strategy made use of speed, secrecy and intelligence to attack exposed or unprepared opponents at unexpected times? The element of surprise and correct timings can ensure that success is achieved which is out of proportion to the energy exerted; this can decisively change the strategic position.

7) Security. Does the strategy secure the resource base and all the vital operating points for the enterprise? Does it develop an effective intelligence system sufficient in preventing surprise from the opponents? Does it use coalitions effectively to extend the resource base and zones of friendly acceptance for the enterprise?

2.3 Effects of Information Technology (IT) on Strategy

The following four sections, 2.3.1 to 2.3.3, will provide examples of the changing nature of the role of IT within the organisation, explore the IT and strategy relationships and will discuss the impact of IT on strategy.

2.3.1 The Changing Nature of the Role of IT within the Organisation

Applegate et al. (1999) provided the following cases which identify the changing nature of the role of IT within the organisation. The first case aimed to solve customer service problems: a major distributor developed an online order processing system and made this available for direct access by its key customers. The system was intended to cut order/entry costs, to speed up processing time and to provide more flexibility to its customers. Although, initially, the company's expectations were modest, the system gave them significant competitive advantage: customer satisfaction increased and the distributor also noted that revenues increased and market share improved. These benefits continued while the company continued with this new system; however, five years later, in an attempt to control internal costs, the firm shifted its commitment from customer service. Despite improved operating efficiency, the profits and market share rapidly declined.

The second case involved a regional airline testifying before the US Congress, which claimed that an automated reservation system of a national carrier was 'anticompetitive' and was forcing the smaller airlines out of business. By locking the travel agents into a common electronic distribution channel, the large firm was 'locking out' the competition. In addition, by providing access to information on the price of all flights for all carriers, the system allowed the large airline to systematically under-price the smaller firms. The airline ultimately went bankrupt (Applegate et al., 1999).

The final case involved a large aerospace company which required its major suppliers to acquire compatible computer-aided design (CAD) equipment, to enable direct links to its design workstations; failure to do so would have resulted in their being dropped as a

supplier. The aerospace firm claimed that access to these direct computer-to-computer links dramatically reduced the total cost of and time for design changes and parts' acquisitions, while simultaneously improving quality. In addition, these online linkages enabled the firm to significantly reduce inventory levels, which further enhanced processing efficiency; without these improvements in cost, quality and cycle time, the aerospace firm would not have been able to respond to the demands of its customers.

These examples capture the changing nature of the strategic and competitive role of information technology (IT) within organisations and industries. Dramatic improvements in the price/performance of IT over the past three decades, when coupled with increased penetration of IT within the firm and the learning that accompanies experimentation and use, have allowed computer systems to move out of the back office to create significant competitive advantage. Of particular importance are the systems that link customers and suppliers electronically (Applegate et al., 1999).

For many firms, the evolution of IT-enabled strategies and improved organisational designs has occurred over a number of years due to their extraordinary expense. Airline reservations systems, for example, evolved over a 30-year period and they are continuing to evolve (McKenney, 1995).

2.3.2 IT and Strategy

The complexity of the IT management challenge increases considerably when IT penetrates to the heart of a firm's (or industry's) strategy. To facilitate planning, the general managers need a comprehensive framework that views the use of IT from a strategic rather than a tactical perspective. Michael Porter's (Porter, 1980) industry and competitive analysis (ICA) framework has proven to be very effective in this respect.

Porter's (1980) work, directed at both strategic business planners and general managers, argues that many of the contemporary strategic planning frameworks view competition too narrowly and pessimistically because they were primarily based on projections of market share and market growth. He explains that the economic and competitive forces in an industry segment are the result of five basic forces: (1) bargaining power of the suppliers, (2) bargaining power of the buyers, (3) the threat of new entrants into the industry segment, (4) the threat of substitute products or services, and (5) the positioning of traditional intra-industry rivals. Figure 2.1 presents these five competitive forces.

Although Porter's initial work did not include IT as a component of the framework, it has proven extremely useful in this regard. Applegate et al. (1999) describes, in Table 2.3, the impact of IT on the five competitive forces.

Table 2.3: Impact of Competitive Forces

Force	Implication	Potential Uses of IT to Combat Force
Threat of new entrants.	New capacity. Substantial resources. Reduced prices or inflation of incumbents' costs.	Provide entry barriers. Economies of scale. Switching costs. Product differentiation. Access to distribution channels.
Buyers' bargaining power.	Prices forced down. High quality. More services. Competition encouraged.	Buyer selection. Switching costs. Differentiation. Entry barriers.
Suppliers' bargaining power.	Prices raised. Reduced quality and services (labour).	Selection. Threat of backward integration.
Traditional intra-industry rivals.	Competition: - Price. - Product. - Distribution and service.	Cost-effectiveness. Market access. Differentiation: - Product. - Services. - Firm.

Source**:** Applegate (1999)

The first column in Table 2.3 lists the key competitive 'forces' that shape the competition in a given industry segment. In a specific industry, not all forces are of equal importance. Some industries are dominated by suppliers (for example, OPEC in the petroleum industry in the 1970s); while other industries are preoccupied with the threat of new entrants and/or substitute products (such as the banking and insurance industries).

The second column lists the key 'implications' for each of the competitive forces. For example, when new entrants move into an established industry segment, they generally introduce significant additional capacities because they have frequently allocated substantial resources to gain a foothold. Typically, new entrants cause a reduction in prices or an increase in costs. Finally, the third column lists some examples of 'how IT can be used to change the balance of power' among these five forces. For example, IT can raise entry barriers by increasing economies of scale, increasing or switching costs, differentiating a product or service or limiting access to key markets or distribution channels.

2.3.3 The Impact of IT on Strategy

Five key questions can be used to guide an assessment of the impact of IT on strategy (Applegate et al., 1999). If the answer to one or more of these questions is yes, then IT could be a strategic resource that would require attention at the highest level.

Q1. Can IT Build Barriers to Entry? A successful entry barrier offers not only a new product or service that appeals to customers but it also offers features that keep the customer 'hooked'. The harder the service is to emulate, the higher the barrier to entry.

A large financial service firm sought to build an effective barrier to entry when it launched a unique and highly attractive financial product dependent on sophisticated software that was both costly and difficult to implement. The complexity of the IT-enabled product caught competitors off guard; it took several years for them to develop a similar product, which gave the initiating firm valuable time to establish a significant market position. Meanwhile, the firm continued to innovate by enhancing the original product and adding value to its services. Competitors not only had to catch up, but also had to catch a moving target.

Q2. Can IT Build-in Switching Costs? Are there ways to encourage reliance on IT-enabled products and services? Can industry participants be encouraged to embed these products and services into their operations in such a manner that the notion of switching to a competitor is extremely unattractive? Ideally, an IT system should be simple for the customer to adopt, at the outset, but then, through a series of increasingly complex but very valuable enhancements, the IT system should become tightly intertwined with the customer's daily routine. Proponents of electronic home banking hope to capitalise on the potential of increasing switching costs. Indeed, in France, a US$ 3 billion 'virtual' bank exists that has no branches; customers who have integrated their financial records into the bank's IT systems conduct all their transactions electronically (Jelassi, 1994). In the United States, the joint marketing programme of MCI, Citibank and American Airlines, through which customers can earn American Airlines 'frequent flyer miles' whenever they use the telephone or their credit cards, is another example of how IT can support value-added services that not only enhance customer loyalty but also increase switching costs.

Q3. Can IT Change the Basis of Competition? In some industries, IT has enabled firms to alter the basis of competition fundamentally within their industry. This occurs when a firm uses IT to radically change either its cost structure (cost advantage) or its product/service offerings (differentiation advantage). For example, in the mid-1970s, a major distributor of magazines, a very cost-competitive industry segment, used IT to lower its cost structure significantly by developing cheaper methods of sorting and distributing magazines. By radically reducing both headcount and inventory, it was able to become the low-cost producer in the industry. Because buyers were extremely price sensitive, the distributor was able to quickly increase market share, but it did not stop there. Having attained significant cost advantage, the distributor then differentiated its products and services. Recognising that its customers were small, unsophisticated and unaware of their profit structures, the distributor used its internal records of weekly shipments and returns to create a new value-added product: a customised report that calculated profit per square foot for every magazine sold, data then compared with the aggregate information from comparable customers operating in similar neighbourhoods. The distributor could thus tell each customer how it could improve its product mix. In addition to distributing magazines, the company used IT and the information it generated to offer a valuable inventory-management service. In this example, the distributor initially used IT to change its competitive position within an industry; it then used IT to change fundamentally the basis of the competition.

Q4. Can IT Change the Balance of Power in Supplier Relationships? The development of IT systems that link manufacturers and suppliers has been central within companies. For example, just-in-time inventory systems have reduced inventory costs and warehouse expenses dramatically, while also improving order fulfilment times.

Traditionally, companies have used inventory to buffer uncertainty in their production processes. Large safety stocks, or raw materials and supplies, are kept on hand to allow operations to run smoothly. But inventory costs money: it ties up capital, it requires costly physical facilities for storage and it must be managed by people. Increasingly, companies are using IT to link suppliers and manufacturers; by improving information flow, they are able to decrease uncertainty and, in the process, reduce inventory, cut the number of warehouses and decrease headcount while also streamlining the production process. A large furniture retailer capitalised on these advantages by linking its materials-ordering system electronically to its suppliers' order-fulfilment systems. Now, when 100 sofas are needed for a particular region, the retailer with the fastest availability and lowest costs gets the order. A major pressed-powder metal parts manufacturer proposed investment into computer-aided design (CAD) which was linked with US$ 100 million sales. Within 18 months, this system shortened the product design cycle from eight to three months (Applegate et al., 1999).

Q5. Can IT Generate New Products? IT can lead to products with higher quality, faster delivery or less cost. Similarly, at little extra expense, existing products can be tailored to meet a customer's specific needs. Some companies may be able to combine one or more of these advantages. Indeed, mergers are often planned around these capabilities. For example, a catalogue company and a credit card provider recently examined the possibility of combining their customer data files to facilitate cross-marketing and offer a new set of services. In another example, credit card companies have become voracious consumers of delinquent accounts by receiving data from other firms; there is a whole industry dedicated to the collection and organisation of these data. Similarly, non-

proprietary research data files can often have significant value to third parties (Applegate et al., 1999).

2.4 Strategic Information Systems Planning (SISP)

Strategic information system planning (SISP) has been identified as a critical management issue (Bechor et al., 2010). It is among the highest ranked issues on management agendas for many years (Luftman et al., 2006). SISP is an important management function (Basu et al., 2002) and is reportedly the top IS concern of CEOs (Moynihan, 1990). Through it, organisations establish effective long-term use of IS and ensure their support of organisational objectives (Cohen, 2008). It is almost obvious that IS management is based on SISP (Synott and Gruber, 1982) and improving SISP is one of the most critical issues facing IS executives today (Choi and Bae, 2009). Both corporate general managers and IS executives consider such improvement to be a fundamental issue (Brancheau et al., 1989; Champy, 1993; Niederman et al., 1991). As investment in IT has been promoted both to support business strategy and create strategic options (Earl, 1988; Henderson and Venkatraman, 1989), an 'industry' of SISP has grown as the IT manufacturers, researchers and management consultants develop different methodologies and techniques (Earl, 1993). It is perhaps therefore not surprising that chief executives have identified SISP as their highest IS concern (Brancheau et al., 1996) and SISP is a major research field within MIS research (Galliers, 1993).

The following Sections 2.4.1 to 2.4.12 will firstly define SISP and then progress to discuss: the evolution of SISP and its methodologies, SISP experiences in several countries, SISP practices in the financial services industry, SISP objectives, SISP

process, SISP successes, SISP internal contextual factors, SISP external consultant functions, SISP success measurements, SISP key stakeholders and finally SISP triggers.

2.4.1 Definition of SISP

Strategic information system planning (SISP) is the process of strategic thinking that identifies the most desirable IS on which the firm can implement and enforce its long-term IT activities and policies (Bechor et al., 2010).

Earlier SISP has been defined as *"the process of identifying a portfolio of computer-based applications that will assist an organisation in executing its business plans and realising its business goals"* (Lederer and Sethi, 1988: 446).

Warr (2004) adjusted Lederer and Sethi definition by expanding the term computing and computer to include telecommunications, networking, and inter-networking and to update the definition to include contemporary IS management issues such as how the IS resources are managed, organised and sourced, therefore his definition with adjustments is:*"SISP is the process of deciding objectives and policies for an organisation's use and management of information and networking technologies which includes identifying applications for IT, developments to IT infrastructures, and improvements to the organisation, management and sourcing of the organisation's IS/IT functions and resources."*

SISP is the process of strategic thinking that identifies the most desirable IS on which the firm can implement and enforce its long-term IT activities and policies. It is a mechanism for assuring that IT activities are aligned with the organisation's evolving needs and strategies (Sabherwal and Chau, 2001)

SISP also includes the specification of databases and systems to support these applications (Lederer and Sethi, 1996) as well as formulating IS objectives, defining strategies and policies to achieve them and developing detailed plans to implement the strategies and policies (Teo et al., 1997).

According to Remenyi (1991), *"SISP is the process of establishing a programme for the implementation and use of IS in such a way that it will optimise the effectiveness of the firm's information resources and use them to support the objectives of the whole enterprise as much as possible"*.

In accordance with Min et al. (1999), SISP is the process of answering the following questions specifically in relation to IS:

- What position is the organisation taking at present? (Current status).
- What position does it plan to take in the future? (Objective).
- What path should it take to reach the objective? (Implementation).

Information systems planning is the process of creating a plan for the implementation and use of IS to maximise the effectiveness of corporate resources to achieve its goals. While Lederer and Sethi (1996), Remenyi (1991) and Min et al. (1999) define SISP as a process, Gottschalk (1998) chooses to use the word 'plan', which supports one of Mintzberg's '5Ps' definitions of strategy. Gottschalk (1998) defines IT strategy as a plan, comprised of projects, which applies IT to assist the organisation to realise its goals.

Remenyi (1990) justifies that IS are in fact 'strategic' because they directly support and shape the competitive strategy of an organisation and they can function as a management information system or a management support system. He argues that because SISP deals directly in the business line of the organisation by 'finding, getting, and keeping clients', it is therefore a strategic resource.

For the purpose of this thesis, the terms 'strategic information systems planning' and 'strategic planning for information systems' will be used synonymously. The following definition of SISP by Lederer and Sethi (1988) will be used, which is:

> *"Strategic Information Systems Planning (SISP) is the process of identifying a portfolio of computer-based applications that will assist an organisation in executing its business plans and realising its business goals".*

To execute SISP, an organisation regularly conducts major, concentrated studies (Lederer and Sethi, 1996). It looks for one of several, similarly well-defined and documented methodologies or it modifies its own. It forms committees of IS experts and users from different departments in the organisation. It often applies the methodology for training and guidance. During the different stages of the study, it defines a portfolio of applications, their priorities, databases, data elements and a network of computers and communications equipment to support them. The study also presents a schedule for their development and installation (Lederer and Sethi, 1996).

Lederer and Mendelow (1993) state that such a planned approach may, however, be too expensive and time consuming, because by the time the plan has been developed, the

organisation's concerns and priorities may have changed enough to make the plan obsolete.

2.4.2 The Evolution of SISP and its Methodologies

The first SISP research emerged in the mid to late 1960s, which is the initial research surfaced SISP issues within broader studies on the management of electronic data processing (EDP). These were looking at how well managed organisations were managing computers (Warr, 2004:34).

According to Lederer and Sethi (1988), the concept of SISP evolved during the 1970s when the primary objectives were to: improve communication with users, increase top management support, better forecast resource requirements and allocate resources, determine more opportunities for improving the IT department and identify new and higher payback computer applications (King, 1988; King and Raghunathan, 1987). According to Premkumar and King (1994), the conceptual foundation for strategic planning for information systems can be found in Zani's (1970) work which described it as top-down planning with emphasis on linking organisation strategies to SISP. Later, researchers questioned the traditional top-down approach and suggested other SISP approaches as discussed below.

Traditionally, *"The literature has invariably viewed IT planning as being driven by the IS function"* (Boynton and Zmud, 1987). *"By the end of the 1980s the need for organisations to have 'strategic plans' for their IS/IT investments was generally understood"* (Ward and Griffths, 1996). There are many different approaches to SISP (Flynn and Goleniewska, 1993). Premkumar and King (1994b) found that, in the last

decade, the development of strategic information systems that provide competitive advantage have initiated a variety of process models and methodologies for planning based on Porter's value chain and competitive force models (McFarlan, 1984; Porter, 1996).

Earl (1993) differentiates between the following five SISP approaches: business-led, method-driven, administrative, technological and organisational. While the business-led approach is based on the current business direction or plan, the method-driven approach requires use of a formal technique or method and the administrative approach emphasises resource planning. The technological approach is based on the assumption that an information systems' oriented model of the business is a necessary outcome of SISP and the organisational approach is premised on IS decisions being made through continuous integration of the IS function and organisation. Formal techniques or methods for IS planning include critical success factors, by Rockart (1979); business systems planning, by IBM (1981); information engineering, by Martin (1982); multiple methodology, by Earl (1989); method/1 by Andersen Consulting; strategic systems planning, by Holland; hierarchical systems planning, by McLean and Soden; and end/mean-analysis, by Wetherbe and Davis (Bowman et al., 1983; Lederer and Sethi, 1988; Shoval and Giladi, 1996; Tukana and Weber, 1996).

Ruohonen (1991) described a stakeholder approach by which different stakeholder groups, such as top management, user management and IS management, communicated different views during the planning process. Sambamurthy et al. (1993) discussed the design of IT planning systems for various organisational contexts.

The output of the IS process is the strategic IS plan, the contents of which may vary depending on the processes conducted (Lederer and Samela, 1996). The document describes the set of decisions, policies and actions that have occurred during the process; furthermore, the plan directs IS development and utilisation (Auer and Reponen, 1997).

SISP methodologies offer support for the overall SISP process (Min et al., 1999). By proceeding in accordance with effective SISP methodologies, corporations can establish the basis for IS that would assist management to improve performance and aid the organisation in proposing, planning and prioritising the proposed IS for short and long-term development and which are in direct association with the business plan (Karababas and Cather, 1994).

SISP methodologies offer a structured approach for conducting the IS planning process, in a timely manner and with maximum effectiveness. Basically, SISP methodologies provide the following (Rowley, 1994):

> *Overview:* A way of obtaining an overview or top-down view of the area to be studied.
>
> *Consistency and flexibility:* Consistency will be achieved between the overall philosophies and methodologies.
>
> *Communication:* Communication between team members and their user community and between individual team members within the team will be facilitated.
>
> *Documentation:* The principal end-product of the process will be a report.

Rational decisions: The methodology should form a vehicle to help management make rational decisions.

As each organisation requires a different perspective in planning, each methodology also requires a unique approach for the planning phase, in terms of the: direction, input, output and management. Hirschheim divided SISP approaches into two categories and directions: IS-led vs. IT-led (in Flynn and Arce, 1995). The IS-led approach is top-down and focuses on information needs and flows which support the decision-making processes. In contrast, the IT-led approach is bottom-up and focuses on searching for productivity improvements which are based on IT utilisation. Lederer and Sethi (1988), on the other hand, divided SISP approaches into alignment and impact planning. The alignment approach focuses on IS as a way of assisting the business goals and the impact approach emphasises the analysis of business processes to identify strategic opportunities for applying IS in order to optimise business performance, modify the organisation's current practices or add new practices.

The differences between SISP methodologies can be clearly identified when they are compared. Although it is difficult to show that one methodology is better than another, it is relatively easy to determine if one methodology is more 'fit' than another for a particular purpose (Min et al., 1999). To illustrate further, SUMMIT-S, a SISP methodology used by Coopers and Lybrand, allows for the definition of detailed plans for organisational change, while 4Front, a SISP methodology used by Deloitte and Touche, includes all phases from strategic planning to implementation (Min et al., 1999).

In general, organisations select or develop their SISP methodologies in accordance with six major circumstances which surround the organisation:

1. Sophistication of the current application portfolio (Rowley, 1995).
2. Development stage of the organisation (Rowley, 1995).
3. Immediate problems facing the organisation and its managers (Rowley, 1995).
4. Amount of resources available for the planning phase (Min et al., 1999).
5. Organisation's sector in business (Min et al., 1999).
6. Importance the organisation places on its IS (Min et al., 1999).

2.4.3 SISP Experiences in Several Countries

SISP has been examined in different countries across both the eastern and western world.

In the UK, for example, Mohdzain and Ward (2007) examined in this research information systems strategic planning (ISSP) in multinationals from the perspective of the subsidiaries. The research was carried out through interviews with the IT and business managers in subsidiaries of nine large American, European, and Japanese multinationals. The evidence from this study reveals that, in the majority of these organisations, IS planning is either centralized or moving towards centralisation. Earl (1993) examined SISP experiences in 27 companies, the research relied on interviews with the IS managers, the general managers and with the line managers; Galliers et al. (1994) focused on lessons learnt from SISP workshops, through the use of three case studies; Levy and Powel (2000) proposed a revised SISP approach for SMEs and applied it to 40 case studies (firms) in the West Midlands of England; Hussin, King and Cragg (2002) examined the relationship of SISP and business alignment using a survey of 256 firms; and Warr (2004) examined how SISP success is influenced by the SISP

approach, the SISP objectives and the context in which SISP is undertaken. His study involved mailing a survey to the IT Directors (or equivalent) in 70 different UK organisations in both the public and private sectors and a survey of 90 business executives.

SISP was also studied in the United States by many different authors. Johnson and Lederer (2010) studied the mutual understanding between the CEO and CIO which is thought to facilitate the alignment of an organsation's IS with its business strategy, and thereby enhance the contribution of the IS to business performance. A survey of 202 pairs of CEOs and CIOs was taken to investigate the relationships between them. Mutual understanding was measured as the role of IS in the organsation, using the perspectives of both executives. Their study extended the theory of IT strategic alignment and provided direction for CEOs and CIOs interested in improving the IS contribution of their organsation. Bush et al, (2009) studied the alignment of information systems with organsational objectives and strategies are a key, contemporary challenge to organsations in general and the health care industry in particular. They conducted interviews with 15 top information systems managers in health care organsations in the USA the process for choosing new information systems to support those objectives and strategies, and the concomitant facilitating and hindering managerial actions and organsational characteristics. The study contributes by confirming that alignment is a significant issue in health care organsations, and that such organsations make deliberate efforts to achieve it. Raghunathan and Raghunathan (1994) studied SISP construct measurement through the use of a survey with 253 participants. Lederer and Sethi (1996) presented in their research survey the SISP experiences of 105 planners, which contributed key prescriptions for SISP, their

relationship to SISP objectives and ultimately to SISP success. Another postal survey, conducted by Basu et al. (2002), concerned SISP practices and objectives from 105 corporate information systems planners. Recently, a study by Newkirk et al. (2008) tested the impact of business and IT changes on SISP, on the planning itself and on the planning and alignment of IS strategy and business strategy through the use of data collected by a postal survey of 161 IS executives.

In Singapore, Toe and Pian (2003) found that a proactive business technology strategy was positively associated with the level of Internet adoption: they used a questionnaire to gather data and obtained 159 usable responses from a sample of 566 firms. Another research survey obtained 471 responses in Norway, where Gottschalk (1999a) examined predictors of SISP implementation success and found descriptions of responsibilities and user involvement to be predictors. In Australia, Cerpa and Verner (1998) presented a longitudinal study of a large Australian company which illustrated that the maturity of the IS functions affect the SISP approach. Rouhonen (1991) conducted three case studies in Finland and identified three different stakeholder groups for SISP: top management, user management and technology management. In South Africa, Venter (1992) conducted action research and developed a framework for SISP that was appropriate to South African universities; the research identified that the mission and goals were essential for SISP success.

Long et al. (2003) studied the alignment of SISP with the evolving business needs and the application of methodology to develop SISP and then evaluate its success, in a leading telecommunications enterprise in Shanghi, China. Choi and Bae (2009) presented an interactive procedure with information for supporting corporate SISP; this

was based on a prescriptive group decision-making method which showed how to consolidate incomplete preference judgements from experts in a Korean electronics company. In India, Rajendran and Vivekanandan's (2008) study focused on the strategic orientation of IS in small businesses and investigated the relationship between the perceived business performance and the organisational impact of adoption of the initial stages of electronic business development: the data were collected using a mail survey of small businesses and focused on nine strategic areas. Hanafizadeh et al. (2008) defined critical success factors (CSFs) for SISP in holding companies by making a case study in an Iranian managerial holding company. This current research proposes to examine SISP in the banking sector in Saudi Arabia.

2.4.4 SISP Practices in the Financial Services Industry

Teubner (2007) expressed SISP as being an important topic for managers and researchers alike, and believes there is evidence of a gap between SISP research and practice. This situation acted as a motivator and an in depth case study was conducted on SISP to investigate this gap; the study was carried out in a German financial services company (FSC). The findings confirmed that practitioners largely ignore academic literature and generally do not use it to support their SISP endeavours. However, this is not the case in the banking sector in Saudi Arabia where both fields are working together to develop and implement SISP. Another example of SISP in the financial services industry is from Jacoby (1995) who examined the relationship between: the time required performing strategic business planning and implementation, and the time required to perform SISP through to the satisfactorily implementation of these systems, based upon the developed information systems plans. Despite the study including two case studies and a sample of 15 US financial service organisations, she failed to include

the Federal Reserve Bank which is the central bank in the USA. Jacoby indicated that business environmental factors change more rapidly than systems can be planned and implemented, using current methods, and consequently IS development is not producing the desired results. She added that the major reason for this is that the time taken to plan, develop and implement SISP is far greater than the business cycle itself. Her study concluded that there are several tactics which business leaders can employ to increase their sensitivity to time factors in the planning and implementation functions of organisations. Among which, it is important to obtain planning requirement data from all stakeholders in order to determine how critical time is, as a success factors, in their business. Based on these findings, the current research intends to add the central bank and examine its influence on SISP success. At the same time, it explores the time taken for developing SISP in banking sector bank in Saudi Arabia.

2.4.5 SISP Objectives

SISP can have several objectives; for instance, SISP is conducted to facilitate the management and control of IT resources (Boynton and Zmud, 1987; Carter et al., 1990; Green, 1991). This involves allocating IT resources (Selig, 1991) and forecasting IT resource requirements (Gottschalk, 1999b). SISP can also be used with the objective of gaining top management commitment to IT (Earl, 1993) and improving communication about IT with the users (Galliers, 1987; Gottschalk, 1999b). As a result, an objective could simply be to raise visibility of IT in the organisation (Selig, 1991). In addition, SISP could be executed with the objective of assisting the organisation to gain competitive advantage (Hartog and Herbert, 1985; Hochstrasser and Griffiths, 1990; Kettinger et al., 1994). In this regard, it could be used to help align IT with the business needs (King, 1978; Reich and Benbasat, 1996; Teo, 1994) and to help identify new and

higher payback applications (Galliers, 1987; Moynihan, 1990). It could also help to: define new business strategies (Porter, 1985) and identify strategic applications (Earl, 1993; Flynn and Goleniewska, 1993; Sullivan, 1985) as well as technological policies and architecture (Earl, 1993; Sullivan, 1985). Table 2.4 provides a set of SISP objectives of previous research projects.

Table 2.4: SISP Objectives and Representative Authors

Objectives of SISP	Representative Authors
Identify strategic applications.	Earl (1993) Flynn and Goleniewska (1993) Sullivan (1985)
Align IT with business needs.	King (1978) Reich and Benbasat (1996) Teo (1994)
Improve communication about IT with users.	Galliers (1987) Gottschalk (1999b)
Increase visibility of IT in the organisation.	Selig (1991)
Forecast IT resource requirements.	Gottschalk (1999b)
Develop technology policies and architecture.	Earl (1993) Sullivan (1985)
Increase top management commitment to IT.	Earl (1993)
Identify new and higher payback applications.	Galliers (1987) Moynihan (1990)
Allocate IT resources.	Selig (1991)
Gain competitive advantage from IT.	Hartog and Herbert (1986) Hochstrasser and Griffiths (1990) Kettinger, Grover, Ghua & Segars (1994)
Facilitate the management and control of IT resources.	Boynton and Zmud (1987) Carter, Nilakanta, and Norris (1990) Green (1991)
Define new business strategies.	Porter (1985)

Source: Adapted from Lederer and Sethi (1996)

The current research aims not only to investigate the applicability of the main defined objectives of SISP for the banking sector in Saudi Arabia but also to summarise these objectives into smaller, more practical and more achievable objectives directly pertinent to this country's banking sector.

2.4.6 SISP Process

Newkirk and Lederer (2006) considered phases and tasks for SISP process as follows.

- Phase 1. Strategic awareness (i.e., planning the IS planning process): determining key planning issues, defining planning objectives, organising the planning team(s), and obtaining top management commitment.

- Phase 2. A Situation analysis (i.e., analyzing the current environment):analyzing current business systems, analyzing current organisational systems, analyzing current information systems, analyzing the current external business environment, and analyzing the current external IT environment

- Phase 3.Strategy conception (i.e., conceiving strategy alternatives): identifying major IT objectives, identifying opportunities for improvement, evaluating opportunities for improvement, and identifying high level IT strategies.

- Phase 4.Strategy formulation (i.e., selecting strategy): identifying new business processes, identifying new IT architectures, identifying specific new projects, and Identifying priorities for new projects.

- Phase 5. Strategy implementation planning (i.e., planning strategy implementation): defining change management approach, defining action plan, evaluating action plan, and defining follow-up and control procedure.

Mentzas (1997) described SISP processes also in terms of five phases and the specific tasks within them. The first phase, strategic awareness, determines and defines the: key planning issues, planning objectives, organises planning team(s) and obtains top management commitment. The second, situation analysis, examines the: current business systems, organisational systems, information systems and the external business and IT environments. The third, strategy conception, identifies the: major IT objectives, opportunities for improvement and high-level IT strategies. The fourth, strategy formulation, identifies: new business processes, new IT architectures, specific new projects and the priorities for the new projects. Finally, strategy implementation planning defines the: change management approach, action plan, and the follow-up and control procedures. These phases and tasks represent the components of the planning process, each has its own objectives, participants, preconditions, products and techniques (Newkirk et al., 2003).

The SISP process has been described by Harris (1995) and Newkirk and Lederer (2007) in terms of IS resource planning activities, that is, in terms of activities associated with the resources that serve as the targets of planning. Information system resource planning activities can be viewed as three constructs. The technical resource planning activities focus on the particular information technologies that are planned, such as: application software, systems software, hardware and network communications; whereas, personnel resource planning activities focus more on people-oriented concerns, such as: technical training, end-user computing, facilities and the personnel themselves (Mirchandani and Lederer, 2004). Finally, data security planning activities focus on protecting the organisation from unwanted intrusion and recovering from such intrusion, if and when it occurs (Anderson and Schwager, 2002).

The typical SISP process, Method/1, developed by Andersen Consulting (1989) contains: scope definitions and organisation, business competitive assessments, present status assessments, information technology opportunities, information technology strategies, organisation plans, data and application plans, technology plans, information action plans, and finally project definitions and planning. This current research intends to explore the SISP process in the Saudi banking sector, in order, to improve it.

2.4.7 SISP Success.

Bechor et al. (2010) defined the success of the SISP process as depending on two variables: first, the degree of improvement in the capabilities associated with the SISP process, and second the degree of effectiveness in meeting the objectives of the SISP process.

The failure to execute SISP successfully could cause opportunities to be missed and efforts to be duplicated; in addition, it could result in incompatible systems and wasted resources (Basu et al., 2002). In fact, today's highly competitive environment, with its rapidly changing IT, could more than ever before increase the dangers of ineffective SISP (Galliers, 1993; Salmela et al., 2000).

In a series of related works, Lederer and Sethi (1996; 1992; 1991; 1988) searched for problems within the processes of SISP that could inhibit its success. The top nine problems identified by Lederer and Sethi (1988) are listed as follows:

1. Difficulty in securing top management commitment.
2. Post-analysis required after the study is completed (additional IT information is required).

3. No training plan for IT development.
4. Success is dependent on the IT leader.
5. Difficulty in finding team leader meeting proper criteria.
6. Lack of sufficient computer support.
7. Ignores the plan and the implementation issues.
8. No analysis of the IT department's strengths/weaknesses.
9. No analysis of the technological environment.

Min et al. (1999) categorised these nine problems into two groups, the first group relating to methodologies (2, 3, 7, 8 and 9) and the second group (1, 4, 5, and 6) not relating. Problems such as the difficulty in finding a team leader meeting the proper criteria or the difficulty in securing top management commitment are unrelated to SISP methodologies and relate to the corporate culture (Min et al., 1999). In follow-up research, Lederer and Sethi (1991) identified five broad problem dimensions which adequately explain the lack of success in SISP endeavours:

1. Failure to consider organisational strategies, characteristics, IS objectives and needs.
2. Failure to achieve the plan, poor communication and poor products of planning.
3. Problems linked to database implementation.
4. Problems related to computing and telecommunications planning.
5. Time span and financial resources necessary to conduct SISP.

The first three factors (organisation, implementation and database) were found to be helpful predictors of SISP satisfaction. In a subsequent study, Lederer and Sethi (1992)

demonstrated that problems associated with ‘cost’ account significantly for those relating to ‘implementation’.

Another problem concerns the duration of SISP (Lederer and Sethi, 1996). When considering the rapid evolution of IT, the duration of SISP is too long. Information Engineering (IE), for example, takes 10-12 months (Flynn and Arce, 1995). Today, business and IT environments are very unstable; to illustrate, in a 10 month period, a totally new and improved IT could emerge within the current fast-changing technological environment.

In his study of IS planning benefits, Earl (1993) developed a taxonomy of concerns (or potential problems). The three categories identified were concerns of method, implementation and process. Earl (1993) wanted to demonstrate that effective management of these concerns is a necessary condition for successful IS planning. Furthermore, Teo and Ang (2001), who examined major IS planning problems, found that failing to secure top management support for the IS planning attempt was the most significant problem; not having free communication flow and not being able to obtain sufficiently qualified personnel were two other major problems; ignoring business goals and failing to translate these goals/strategies into action plans were also identified as main problems; and finally, neglecting to adjust the IS plan to reflect major environmental changes was another major problem .

After discussing the failures and problems of SISP, it is also important to identify SISP successes and its measurements. The benefits of SISP cannot be reduced to such simple financial measures as return on investment, payback or internal rate of return (Segars

and Grover, 1998; Sugumaran and Arogyaswamy, 2004). This is because SISP, like strategic business planning, produces many difficult-to-assess benefits (King, 1988; King and Graver, 1991). Therefore, measuring SISP success is complex and considers these intangibles. Segars and Graver (1998) have shown that SISP success comprises four dimensions of objectives which they refer to as alignment, analysis, cooperation and improvement in capabilities. Raghunathan and Raghunathan (1994) based their work on some strategy process research (Venkatraman and Ramanujan, 1987) and developed and validated a two-dimensional measure reflecting the ends and means of SISP. These two popular measures have been used to assess SISP success (Lederer and Sethi, 1996). The first is concerned with the fulfilment of the objective (Venkatraman and Ramanujam, 1987); this measure is used to evaluate IS planning effectiveness (Premkumar and King, 1992). The second measurement of SISP success focuses on planner satisfaction (Flynn and Goleniewska, 1993; Lederer and Sethi, 1988; McLean and Soden, 1977). These studies gauge SISP success in terms of the planner's satisfaction with the study's resources, processes, outputs and implementations. Therefore, although both of these measures (the fulfilment of objectives and planner satisfaction) might be likely to be correlated, they would still be distinct constructs (Raghunathan and Raghunathan, 1994; Venkatraman and Ramanujam, 1987). This measure recognised that SISP can be successful in achieving specific objectives for SISP like improved resource allocation and also developing SISP capabilities like coordinating IS decision making or identifying key problem areas. It was found that two dimensions: improvements in SISP capability and fulfilment of SISP objectives were not fully supported because of an overlap between these two concepts, suggesting that either of these dimensions could be used (Warr, 2006).

For the purpose of the current research, the measure to be used is that SISP is successful when specific objectives for SISP are achieved. The main objective for SISP in the banking sector including the Saudi one is to develop and implement a modern payment system, which will be explained in more detail in Chapter 3.

2.4.8 SISP Internal Contextual Factors

Researchers have shown that top management support is extremely important for successful IS planning (Philip, 2007; Teo & Ang, 2001) and successful IS implementation (Byrd & Davidson 2003; Caldeira & Ward, 2003; Ranganathan& Kannabiran, 2004).

Earl (1993) examined SISP experiences in 27 UK companies, among which were banks. In his study, the five SISP success factors were top management involvement; top management support, business strategy availability, a study of the business before technology and good IS management.

Top management involvement means that the top executives champion SISP (Basu et al., 2002). The planners determine the senior management's key planning concerns (Dansker et al., 1987) and they keep the top executives informed with regard to the SISP objectives, scope and approaches, so as to maintain commitment (Jarvenpaa and Ives, 1991). The top executives offer feedback and guidance throughout the SISP implementation (Earl, 1993) and the senior managers are educated about IT (Earl, 1993; Parsons, 1983; Sabherwal, 1999). The senior managers' practices are critical to SISP success. For example, senior management's involvement leads to effective SISP (Cerpa and Verner, 1998; Earl, 1993; Schuman and Rohrbaugh, 1991), whereas a lack of such involvement (Cerpa and Verner, 1998) and understanding (Nath, 1989; Sabherwal,

1999) has been recognised as a major barrier to the positive outcome of SISP. Deficiency in the senior management's understanding has even led to major SISP failures (Salmela, 2000).

Commitment from the top management represents the organisation's support for SISP (Byrd et al., 1995). The presence of sufficient resources is an indicator of such commitment (Barlow, 1990; Gottschalk, 1999b; Premkumar and King, 1994); for instance, to maintain continuity key people should remain with the SISP study from start to finish (Newman and Sabherwal, 1996). When management control SISP closely enough to resolve conflicts among different organisational subunits, their commitment is evident (Earl, 1993; Newman and Sabherwal, 1996). Furthermore, when the management's expectations for the outcomes of SISP are reasonable (Newman and Sabherwal, 1996), the highly credible SISP leaders and sponsors, who also have high credibility, demonstrate their commitment (Soh et al., 1993).

The user managers and the IS professionals are the planning team responsible for SISP. The significance of team involvement in the planning process is widely expected by both the researchers and the practitioners (Gottschalk, 1999a, 1999b; Ray, 1999). According to Basu et al. (2002), team involvement in SISP is indicated by the soliciting of planning inputs from the organisational levels responsible for implementing the plan. The planning team involvement is reflected when information about the business changes occurs during the SISP study (Eardley et al., 1997; Gottschalk, 1999b). The team members of SISP are chosen on the basis of competence, rather than availability (Goodhue et al., 1992; Teo et al., 1997) and their high credibility (Galliers, 1987; Soh et al., 1993) is displayed in their involvement. Furthermore, educating IS personnel about

organisational objectives and key issues, so that they can enhance support users (Byrd et al., 1995; Galliers, 1987), train SISP team members in SISP methodologies (Brancheau et al., 1989; Cerpa and Verner, 1998) and educate them about SISP's scope and goals, the organisation's mission and purpose and its environment (Byrd et al., 1995; Cerpa and Verner, 1998), are all critical elements of the team's involvement.

The current research intends to extend the study of the above factors by investigating SISP in the Saudi banking sector. These factors have been identified as SISP internal contextual factors since they are mainly connected internally with SISP development and implementation. Those factors are the availability of business strategy, the alignment of IS strategy with the business strategy, the team members of SISP, the management commitment and the management support. The relationships between the elements of SISP internal factors and SISP success will be examined.

2.4.9 SISP external consultant functions.

External consulting practitioners often argue that they add value to their clients by providing knowledge or expertise unavailable or undefined in their clients' organisations (Dawson, 2000; Scott, 1998). Consulting is widely recognised as a knowledge-intensive activity (Engwall and Kipping, 2002). From an historical perspective, consulting emerged in the latter part of the 19th century as an activity that thrived on the efficiency of employing external expertise for solving problems that are brief, specialised and non-recurring within a particular client organisation (McKenna, 2006). According to Richter and Niewiem (2009), the academic literature identifies that the provision of knowledge to clients is regarded as being an important function of the consultants.

In the IS field, knowledge and technical know-how can pose important barriers to complex technological diffusion (Attewell, 1992). Researchers highlight the prominent role that external consultants play in implementing technology (Thong, 2001; Wang and Chen, 2006). Competent consultants are valuable to the implementation of complicated systems because significant knowledge asymmetry typically exists between the client and the consultant (Sharama, 1997). Knowledge asymmetry can induce client dependence on consultants, thus increasing the importance of the quality of consultants for the implementation of complicated systems. Freeman and Dart (1993) described consultant quality based on the extent of support, help and work and the reliability that the external consultants provided. Competent consultants are not only well trained in field implementation methodologies but also have real system deployment experiences (Bingi, 1999).

Despite Lederer and Sethi's stating (1996) that external consultant can provide great value as a source of information about SISP because they have much experience and have learned from many organisations, there were very few studies that focused on the main functions of the external consultants in SISP.

The Saudi banking sector employs competent external consultants in several areas, including SISP; the current research therefore intends to investigate the relationship between the functions of external consultants and SISP success in the Saudi banking sector. The main functions of the external consultants which relate to SISP in the sector, as gathered from the IT directors in Saudi banks, are to explain the importance of the study, to train bank employees on the methods used, based on changes in technology, to work with bank employees as team members, to transfer technology to the bank

employees, to use qualified and experienced people, to provide adequate support to information systems in the bank, to be viewed by management of the bank as the leader of the IS initiative, to make many of the major decisions about IS in the bank and finally, to act as an adviser and assist with decisions about IS only when invited.

2.4.10 SISP success measurements

As previously mentioned, the benefits of SISP cannot be reduced simply to the financial measures of return on investment, payback or internal rate of return (Segars and Grover, 1998: Sugumaran and Arogyaswamy, 2004). SISP, like strategic business planning, produces many difficult-to-assess benefits (King, 1988, King and Graver, 1991); measuring SISP success is therefore complex and considers these intangibles.

There are two types of success measurements in the Saudi banking business sector: external (by the public) and internal (by the bank's management). External measurements include reducing cost of the services, improving quality of the services to the public and improving the security of the public accounts. Internal measurements include cost reduction, improving market share and increasing profit.

This current research proposes to examine the utilisation and relationship of these internal and external measurements and SISP success.

2.4.11 SISP Key Stakeholders

Rouhonen (1991) found three different stakeholder groups for SISP: top management, user management and technology management. Several authors (Drury, 1984; Jarvenpaa and Ives, 1991; Burn and Szeto, 2000; Warr, 2004) agree that there are three

key stakeholder groups within SISP organisations: IS management, top management and user management. Warr (2004) noted that the major focus of SISP research was on using IS management stakeholders as "*informants, possibly because they are in the best informed position on SISP generally*" (Warr, 2004: 33). Burn and Szeto (2000), in their survey of 93 organisations in Hong Kong, studied the different views from business and IT executives, as key stakeholders, on the success factors for strategic alignment and found there were no differences. In addition, Tai and Phelps (2000) found no significant differences in the perceptions of CEOs and CIOs as key stakeholders, in their survey of 63 organisations in Hong Kong. These authors studied only the following three key stakeholder groups for SISP: IS management, top management and user management therefore external consultants were not included.

External consultants can have great value as a source of information about SISP because they have experience and knowledge from many organisations (Lederer and Sethi; 1996). The current research proposes to expand the key stakeholder groups for SISP by adding external consultants. At the same time, it will investigate the relationship between the key stakeholder roles and SISP success in the banking sector. These roles, linking SISP in the banking sector, are themselves initiating, leading, involving, spending time and exerting power.

2.4.12 SISP Triggers

The main triggers for SISP were presented by CIO Communication Inc and ICEX Inc (1997) as new executive(s) being appointed, changes in technology, changes in organisation structure, cost pressures, need to improve IS performance, changes in corporate business strategy and failures in the last project(s). They developed and tested

a formal survey by distributing it to a variety of IT organisations and received responses from more than 300 companies, from a number of industries. The survey respondents most frequently cited 'changes in organisation structure' (due to mergers, for instance) as a key factor in their decision to launch their most recent IT strategy. The appointment of a new CIO and changes in technology were selected as the top reason by 15% of respondents, while 14% attributed their motivation to either the need to improve IS performance or simply the fact that 'we've always done it'. Cost pressures were not a significant impetus for a strategy initiative and only 7% reported that they had completed IT strategy planning to assess how their core business might change as a result of technology changes. The CIO Communications and ICEX (1997) ranked these triggers, using percentages; however, they did not examine their effects on SISP success. The current research intends to extend this study by investigating the relationship between these triggers and SISP success in the banking sector.

2.5 Summary

Superior strategy is behind every successful organisation. Strategy is a plan, a form of consciously intended course of action, a guideline (or set of guidelines) to deal with a situation. SISP refers to the process of identifying a portfolio of computer-based applications that will assist an organisation in executing its business plan and consequently achieving its business goals. SISP has received significant attention in recent years and has remained among the top 10 issues facing IS researchers and practitioners.

SISP has been examined in different countries across the world, including the UK, the USA, Singapore, Norway, Australia, Finland, South Africa, China, Korea, India and Iran. This current research will examine SISP in Saudi Arabia.

SISP has also been practised in the financial services industry. The current research intends to develop this by including the central bank and examining its influence on SISP success.

The SISP objectives, identified by previous research, include aligning IT with the business, gaining competitive advantage, identifying new and higher payback applications, identifying strategic applications, increasing top management commitment, improving communications with users, forecasting IT resource requirements, allocating IT resources, developing an information architecture and increasing the visibility of IT. The current research aims to investigate the applicability of these objectives, specifically in the Saudi banking sector, by summarising them into more practical, user-friendly and achievable objectives for the banking sector.

SISP processes have been described in terms of phases and the specific tasks within them and in terms of IS resource planning activities. The current research intends to explore the SISP process in the Saudi banking sector, in order, to improve it.

SISP is successful when specific objectives for SISP are achieved. The main objective behind SISP in the Saudi banking sector is to develop and implement the national modern payment systems.

The internal contextual factors for SISP contain top management involvement, top management commitment, business strategy availability, studies the business before the technology and good IS management. The current research aims to examine the impact of these factors on the success of SISP in the Saudi banking sector.

The external consultants can provide great value, as a source of information about SISP, because they have much experience and have learned from many different organisations. There were only a few studies that focused on the main functions of the external consultants in SISP. The current research intends to examine the impact of the main functions of the external consultants in SISP on the success of SISP in the Saudi banking sector.

Furthermore, this current research proposes to expand the three key stakeholder groups for SISP, by addition of external consultants to the existing list of IS management, top management and user management. The study will therefore investigate the relationship between the key stakeholder roles and SISP success in the Saudi banking sector.

Finally, the current research will further investigate the relationship between SISP triggers and SISP success in the banking sector in Saudi Arabia.

CHAPTER 3

SISP External Contextual Factors Literature Review

3.1 Introduction

Chapter 2 provided an overview of the main issues relating to SISP such as, SISP objectives, SISP process, SISP successes, SISP internal contextual factors, functions of external consultants in SISP, external and internal measurements of SISP success, SISP key stakeholders and different SISP triggers. This chapter intends to introduce certain external contextual factors affecting SISP in the banking sector including the Saudi one. In order to address them, the chapter will be organised as follows: first, in section 3.2, the national culture will be reviewed; in section 3.3, the related government and public organisations will be discussed; in section 3.4, the connected international institutions will be investigated; in section 3.5, the linked competitors will be reviewed in section in section 3.6, the allied partners will be evaluated; while in sections 3.7 to 3.9, the importance of information technology to the banking sector in Saudi Arabia and the significance of the banking sector to the nation's economy will be explained. In section 3.10 research constructs will be seen. Finally, at the end, a chapter summary will be presented.

3.2 National Culture

Failures of many IS implementation are attributed to human/organisational issues rather than technical problems (Au et al., 2008). The concept of Information Technology (IT) usage is a multi-level construct consisting of individual, group and organisational levels.

(Burton-Jones and Gallivan, 2007). It involves the user, the system and the task (Burton-Jones and Straub, 2006). Because it involves the user, it necessarily also involves the user's culture. Culture is an important factor in the acceptance and effective use of information technologies (Gallivan and Srite, 2005; Kappos and Rivard, 2008; Leidner and Kayworth, 2006)

Berger and Luckmann (1967) recognised the effect of the social environment, culture and religion on how people construct realities about their world. They argued that meaning is developed through the interactions of social processes which involve people, language and religion.

Saudi society is mainly conservative and religious; Islam plays a central role in defining the culture and determining the norms, values, attitudes and practices of society (Al Munajjed, 1997). Religion and culture, in Saudi Arabia, not only shape people's attitudes, practices and behaviours, but also shape the way they see and do things, including the way in which they perceive their lives (Al-Saggaf, 2004; Al-Saggaf and Williamson, 2004).

One of the most important features that profoundly influences every aspect of public and social life in Saudi Arabia is the segregation of the sexes (Wheeler, 2002). This is maintained physically, socially and psychologically; it is a general rule that applies to education, banking, public transportation and the workplace.

Arabic is the official language of Saudi Arabia and it is the language of the Qur'an. English is also used in the Kingdom, most frequently when conducting business, healthcare, commerce and international affairs and in the hotel industry.

Since religion, language and segregation are the most important features of the Saudi culture and therefore influence all aspects of life, the current research will examine the impact of these features on the success of SISP in the Saudi payment systems.

3.3 Government and Public Organisations

A number of government and public organisations are linked to SISP in the Saudi banking sector; they include the Ministry of Finance, Saudi Telecommunications Company (STC), Ministry of Interior and Saudi Electric and Water Agency. The following sections 3.3.1 to 3.3.3 introduce and discuss them.

3.3.1 Ministry of Finance

On 11/4/1351H (11.8.1932G), the Royal Decree No. 381 was issued which changed the name of the Public Finance Agency to the Finance Ministry, the second ministry to be established after the Foreign Ministry. The Finance Ministry became responsible for the organisation, maintenance and collection of the government's finances, as well as for initiating budgeting methods.

The Ministry of Finance's duties (MOF, 2010) are to:

1) Oversee the Kingdom's financial and monetary policies and monitor the implementation thereof by competent agencies.

2) Prepare the Kingdom's general budget, discuss it with other government agencies and monitor the implementation thereof.

3) Maintain the records of all current accounts between the Ministry and other government agencies.

4) Control the antecedent prior to expending from budget allocation in all government agencies.

5) Oversee the Kingdom's revenue gathering procedures and ensure the conformity of these procedures with the established set of regulations and bylaws.

6) Oversee finalisation of the governments' annual closing accounts record of expenditures.

7) Supervise and maintain government properties.

8) Represent the Kingdom to international and regional economic and financial organisations (such as The World Bank (WB), International Monetary Fund (IMF), Gulf Cooperative Council (GCC) and the Bank for International Settlements (BIS)), in order to pursue financial and economic information worldwide and to prepare the necessary studies and reports connected therewith.

9) Give effect to the Kingdom's decisions regarding foreign aid.

10) Implement the Kingdom's policy with respect to granting loans to Saudi citizens and businesses in different development areas through the commercial banks and the specialised credit institutions.

Most of the above duties relate to activities in the banking sector, such as overseeing the financial and monetary policies and monitoring the implementation by competent agencies, mainly SAMA, and implementing the policy with respect to granting loans to citizens and businesses through the commercial banks. Thus, the current research investigates the influence of the duties of the MOF on the success of SISP in the Saudi payment systems.

3.3.2 Saudi Telecommunications Company (STC)

The Saudi Telecom Company was incorporated in 1998, following the Council of Ministers' Decree No. 213, dated 23/12/1418 H, which approved the establishment of a Saudi Stock Company under the name of the Saudi Telecom Company (STC, 2010). Accordingly, the STC adopted a programme aiming to transform its business from a government system into a recognised commercial business. The company developed several strategies which focused on internal reorganisation, enhancement of its internal processes and studying its customers' needs. The STC, as the national provider of telecommunication services in the Kingdom of Saudi Arabia, is working to fulfil and satisfy the market requirements by keeping pace with the emerging technologies in the telecommunications sector and by satisfying its customers' needs (STC, 2010).

Since the banking sector requires the STC to provide telecommunication services in its activities, the current research examines the effect of the services of the STC on the success of SISP in the Saudi payment systems.

3.3.3 Ministry of Interior and Saudi Electric and Water Agency

The Ministry of Interior and the Saudi Electricity and Water Agency are considerable and sizeable users of the payment systems and their banking transactions are very important since they deal with almost the whole nation. The present research, therefore, examines the influence of these large volumes of user transactions on the success of SISP in the Saudi payment systems.

3.4 International Institutions

The international institutions which govern and are also linked to SISP in the Saudi banking sector are the International Monetary Fund (IMF), Society for Worldwide Interbank Financial Telecommunication (SWIFT), Gulf Cooperative Council (GCC), World Bank (WB) and the Bank for International Settlements (BIS). The discussions of these institutions are presented in the following five sections, 3.4.1 to 3.4.5.

3.4.1 International Monetary Fund (IMF)

The International Monetary Fund (IMF) is an organisation involving 186 countries, Saudi Arabia being one of them, which are working to foster: global monetary cooperation; secure financial stability; facilitate international trade; promote high employment and sustainable economic growth; and reduce poverty around the world (IMF, 2009). The IMF was created in July 1946, originally with 45 members (Sullivan and Sheffrin, 2003), with a goal of stabilising exchange rates and assisting in reconstructing the world's international payment system. The IMF was very important at the time of its creation because it helped the world stabilise the economic system. The IMF is still important today because it works to improve the economies of its member countries (Escobar, 1988).

The IMF's supporting programmes often include measures to strengthen member countries' financial systems. In addition to providing financial assistance, the IMF assists members to: identify and diagnose financial system problems to design, in conjunction with the World Bank, strategies for systemic reforms and bank restructuring; and to ensure that such strategies are consistent with and supported by appropriate macroeconomic and other structural policies (IMF, 2010).

These supporting programmes are related to the current research objectives since they are directly connected to the financial system, of which the payment system is the backbone. These programmes normally involve cooperation between the IMF, and the Saudi Ministry of Finance and SAMA. Thus, the current research investigates the influence of the supporting programmes of the IMF on the success of SISP in the Saudi payment systems.

3.4.2 The World Bank

The World Bank is a term used to describe an international financial institution that provides leveraged loans to developing countries for capital programmes (World Bank, 2008). Although both are based in Washington, the World Bank has by custom an American leader, while the IMF is led by a European.

The World Bank (2008) sees the following five key factors as necessary for economic growth and for the creation of an enabled business environment:

1. Build capacity: strengthening governments and educating government officials.
2. Infrastructure creation: implementation of legal and judicial systems for the encouragement of business, the protection of individual and property rights and the honouring of contracts.
3. Development of financial systems: the establishment of strong systems capable of supporting endeavours from micro credit to the financing of larger corporate ventures.
4. Combating corruption: support for countries' efforts at eradicating corruption.
5. Research, consultancy and training: providing a platform for research on development issues, consultancy and conducts training programmes (web- based, online, tele/video conferencing and classroom-based) open for

those who are interested from academia, students, government and non-governmental organisation (NGO) officers, etc...

The third and fifth factors relate to the current research objectives because the development of financial systems normally involves a joint offer between the World Bank, the Saudi Ministry of Finance and SAMA; furthermore, consultancy to the World Bank is regularly accomplished with the Saudi Ministry of Finance and SAMA. So this research examines the impact of the activities of the World Bank on the success of SISP in the Saudi payment systems.

The World Bank is not without criticism; one of the strongest concerns the way in which it is governed. While the World Bank represents 186 countries, including Saudi Arabia, it is run by a small number of economically powerful countries. These countries choose the leadership and senior management of the World Bank, so their interests dominate the bank (Woods, 2006).

3.4.3 Society for Worldwide Interbank Financial Telecommunication (SWIFT)

SWIFT is a member-owned cooperative through which the financial world conducts its business operations with speed, certainty and confidence. More than 8,300 banking organisations, security institutions and corporate customers (the Saudi banking sector among them), from 208 different countries, depend on it in every day to exchange millions of standardised financial messages (SWIFT, 2010).

SWIFT's role is two-fold: first, it provides the proprietary communication platforms, products and services that allow the banks to connect and exchange financial information, securely and reliably; second, it acts as the catalyst that brings the financial community together, to work collaboratively, shape market practice, define standards

and consider solutions to issues of mutual interest (SWIFT, 2010). SWIFT enables its customers to automate and standardise financial transactions, thereby lowering costs, reducing operational risks and eliminating inefficiencies from their operations.

SWIFT was established in 1973, its headquarters are located in Belgium and it has offices in the world's major financial centres, including Dubai. It is solely a carrier of messages; it does not hold funds nor manage accounts on behalf of customers and it does not store financial information on an on-going basis. As a data carrier, SWIFT transports messages between financial institutions. This activity involves the secure exchange of proprietary data while ensuring its confidentiality and integrity.

Since SWIFT's activities are connected with the banking sector's activities, the present research examines the impact of the activities of SWIFT on the success of SISP in the Saudi payment systems.

3.4.4 Bank for International Settlements (BIS)

The Bank for International Settlements (BIS) is an international organisation which fosters international monetary and financial cooperation and serves as a bank for the central banks (BIS, 2010). The head office is in Basel, Switzerland, and there are two representative offices in Hong Kong and Mexico City. The BIS was established on 17th May 1930 and is recognised as the world's oldest international financial organisation. The BIS currently has 56 member central banks, including Saudi Arabia, all of which are entitled to be represented and can vote at their general meetings. As its customers are central banks and international organisations, the BIS does not accept deposits from or provide financial services to private individuals or corporate entities.

Promoting monetary and financial stabilities is one of the key objectives of the BIS. Bimonthly meetings involve the governors and other senior officials from the member

central banks; monetary and financial matters are discussed as instrumental in pursuing their goals. The standing committee, located at the BIS, supports the central banks and the authorities in charge of financial stability more generally, by providing background analysis and policy recommendations. One of the committees, which relates to the current research, is the Committee on Payment and Settlement Systems (CPSS). The CPSS (2010) contributes to strengthening the financial market infrastructure through promoting sound and efficient payment and settlement systems. It is a standard settling body for the payment and securities settlement systems. It also serves as a forum for central banks to monitor and analyse developments in domestic payments, settlements and clearing systems, as well as in cross-border and multicurrency settlement schemes. Furthermore, this committee has contributed to the set of standards, codes and best practices that are deemed essential for strengthening the financial architecture worldwide. The committee publishes various reports which cover: large-value fund transfer systems; security settlement systems; settlement mechanisms for foreign exchange transactions; clearing arrangements for exchange traded; and cover, over-the-counter derivatives and retail payment instruments, including electronic money. The 'Red Book' on payment systems, which provides extensive information on the most important systems in the CPSS countries, is periodically revised and a statistical update of the data it contains is published each year (BIS, 2010). This research therefore examines the impact of the activities of BIS on the success of SISP in the Saudi payment systems.

3.4.5 Gulf Cooperative Council (GCC)

The Gulf Cooperative Council (GCC) was established in an agreement which was concluded on 25th May 1981 in Riyadh, Saudi Arabia, between: Bahrain, Kuwait,

Oman, Qatar, Saudi Arabia and the UAE. These countries declared that the GCC should be established due to the special relations between them, their similar political systems were based on Islamic beliefs and they had joint destinies and common objectives. The GCC is a regional common market which also has a defence planning council. The geographic proximity of these countries and their general adoption of free trade economic policies are factors that encouraged them to establish the GCC (GCC, 2010).

Among the stated objectives are:

- Formulating similar regulations in various fields, such as: economy, finance, trade, customs, tourism, legislation, and administration.
- Fostering scientific and technical progress in: industry, mining, agriculture, water and animal resources.
- Establishing scientific research centres.
- Setting up joint ventures.
- Unified military presence.
- Encouraging cooperation of the private sector.
- Strengthening ties between their people.
- Establishing a common currency by 2010.

However, in December 2006, Oman announced that it would not meet the target date of establishing a common currency and the UAE announced their withdrawal from the monetary union project in May 2009. This happened immediately after it was announced that the central bank, for the monetary union, would be located in Riyadh, Saudi Arabia, and not in the UAE.

Since the GCC objectives are connected to the activities of the banking sector, including encouraging cooperation of the private sector and establishing a common currency, the

present research examines the impact of the achievement of these objectives on the success of SISP in the Saudi payment systems.

3.5 Competitors

Al-Suhaimi (2001) stated that along with sustained growth and systemic stability, a major policy of the Saudi government was to encourage and maintain a healthy competitive environment so that the customers were able to access a broad range of banking and financial services in an efficient and cost-effective manner. In the early years, the government encouraged customer service by permitting a number of foreign banks to open branches in the country and also licensed domestic banks for competition. The government was selective and licensed foreign banks from different parts of the world, with varying management cultures, systems and technologies (Al-Suhaimi, 2001). More recently, banks have been distributing life and other insurance products to their customers and they have invested in leasing companies. These initiatives have promoted a very competitive environment in the domestic market. Also, real estate offices have been distributing some banking products by lending to the public. These organisations: banks, insurance companies and real estate offices, normally deal with and learn from each other's experiences. This current research examines the impact of these organisations on the success of SISP in the Saudi payment systems.

3.6 Partners

A number of partners govern and are linked to SISP in the Saudi banking sector and include the Central Bank, Visa Card, MasterCard (MC) and American Express (AMEX). These different partners are introduced and discussed in the following sections (3.6.1 to 3.6.4).

3.6.1 Central Banks

A central bank, reserve bank, monetary authority or monetary agency is a banking institution granted the exclusive privilege which allows it to lend a government its currency. Like a normal commercial bank, a central bank charges interest on the loans made to borrowers; primarily, to the government of whichever country for the bank exists, and to other commercial banks, typically as a 'lender of last resort'. However, a central bank is distinguished from a normal commercial bank because it has a monopoly on creating the currency of that nation, which is loaned to the government in the form of legal tender. It is therefore a bank that can lend money to other banks in times of need (Sullivan and Sheffrin, 2003). Its primary function is to provide the nation's money supply, but more active duties include controlling subsidised-loan interest rates and acting as a lender to the banking sector during times of financial crisis (private banks are often integral to the national financial system). It may also have supervisory powers, to ensure that the banks and other financial institutions do not behave recklessly or fraudulently.

Richer countries today have an 'independent' central bank, that is, one which operates under rules designed to prevent political interference. Examples include the European Central Bank (ECB) and the Federal Reserve System in the United States. Some central banks are publicly owned, like SAMA, while others are privately owned, for example the United States Federal Reserve is a quasi-public corporation (Fed, 2010). These banks normally deal with and learn from each other's experiences. In addition, their payment systems are, to some extent, similar. The current research, therefore, examines

the impact of the relationships between these central banks on the success of SISP in the Saudi payment systems.

3.6.2 Visa

Visa Inc. is a global payments technology company, with headquarters in San Francisco, California, USA. Visa connects consumers, businesses, financial institutions and governments across more than 200 countries and territories, including Saudi Arabia, which enables them to use digital currency instead of cash and cheques (Corporate Visa, 2010). The company facilitates the processing of transactions on behalf of financial institutions and merchants through VisaNet, one of the world's most advanced processing networks capable of handling more than 10,000 transactions per second (Investor Visa, 2010). In 2009, Visa's global network processed 62 billion transactions, with a total volume of US$ 4.4 trillion (Phx Visa, 2010).

Visa does not issue cards, extend credit or set rates and fees for the consumers; rather, it provides financial institutions with Visa-branded payment products they can then use to offer credit, debit, prepaid and cash-access programmes to their customers. In 2008, according to the Nilson Report (2009), Visa held a 38.3% market share of the credit card marketplace and 60.7% of the debit card marketplace, in the United States. Recent complications include the addition of exceptions for non-signed purchases by telephone or on the Internet, where an additional security system called 'Verified by Visa' has been introduced for purchases made over it.

All kinds of Visa transactions are connected with the Saudi payment system's transactions, such as ATM and PoS. In addition, all the Saudi banks issue Visa cards. So

the current research examines the impact of the activities of Visa on the success of SISP in the Saudi payment systems.

3.6.3 MasterCard (MC)

MasterCard Worldwide is a multinational corporation and its international global headquarters are in Harrison, New York, United States (MasterCard, 2010). Throughout the world, its principal business is to process payments between the banks of merchants and the banks of purchasers who use 'MasterCard' branded debit and credit cards to make purchases. MasterCard Worldwide has been a publicly traded company since 2006. Prior to its initial public offering, it was a membership organisation owned by the more than 25,000 financial institutions, the Saudi bank being among these which issued its cards. MasterCard, originally known as MasterCharge, was created by several Californian banks as a competitor to the BankAmericard issued by the Bank of America; this later became the Visa credit card issued by Visa Inc.

Since the Saudi banks issue MasterCard cards and the Saudi payment systems are connected with the MasterCard networks, this research examines the impact of the activities of MasterCard on the success of SISP in the Saudi payment systems.

3.6.4 American Express (AMEX)

The American Express Company, sometimes known as 'AmEx' or 'Amex', is a diversified global financial services company with headquarters in New York City. Founded in 1850, it is best known for its credit cards, charge cards and traveller's cheques. Amex cards account for approximately 24% of the total dollar volume of credit card transactions in the US, the highest of any card issuer (IR American Express, 2010). Even though American Express products have been available to customers, merchants

and corporations in Saudi Arabia for over 20 years, the formation of Amex Saudi Arabia Limited in 1999 represented a major milestone for the development of the American Express brand in Saudi Arabia (American Express, 2010).

Amex Saudi Arabia Limited is a joint venture company, equally owned by Amex Middle East, EC and the Saudi Investment Bank. The company owns and operates the American Express card and merchant business in Saudi Arabia (American Express, 2010). Combining the resources and expertise of American Express with the Saudi Investment Bank has contributed to the development and expansion of the services offered to American Express card members and merchants in Saudi Arabia.

Amex is the only joint venture company in Saudi Arabia which issues credit cards, charge cards and traveller's cheques and which is connected with the Saudi payment system. This research therefore investigates the impact of the activities of Amex on the success of SISP in the Saudi payment systems.

3.7 Saudi Economy

Saudi Arabia is currently facing an exciting and challenging economic environment. The country has embarked on large scale and wide-ranging structural and economic reforms. Key economic data for Saudi Arabia, from 2003 to 2011, have inspired changes and developments within the banking sector which include gross domestic productivity (GDP), unemployment, population, oil price, current accounts, government budget balance, government domestic debt, official foreign assets and external trade; Table 3.1 highlights these economic data.

Table 3.1: Key Economic Data

	2003	2004	2005	2006	2007	2008	2009	2010 F	2011 F
Nominal GDP									
(SR billion)	804.6	938.8	1182.5	1335.6	1442.6	1781.6	1384.4	1554.0	1680.1
US$ billion equivalent	214.6	250.3	315.3	356.2	384.7	475.1	369.2	414.4	448.0
% change	13.8	16.7	26.0	12.9	8.0	23.5	-22.3	12.2	8.1
Real GDP (% Change)									
Oil	16.2	6.7	6.2	-0.8	-3.6	4.2	-6.4	3.8	3.9
Non-Oil Private Sector	3.9	5.3	5.8	6.1	5.5	4.8	2.5	3.8	4.4
Government	3.1	3.1	4.0	3.1	3.0	3.7	4.0	3.6	3.4
Total	7.7	5.3	5.6	3.2	2.0	4.3	0.1	3.8	4.0
Unemployment (male, 15+, %)	8.2	8.5	8.8	9.1	9.0	8.8	8.5	8.2	8.0
Population(million)	22.0	22.5	23.1	23.7	24.2	24.8	25.5	26.3	27.0
Saudi	15.1	15.6	16.2	16.8	17.7	18.1	18.7	19.6	20.3
Non-Saudi	6.9	6.9	6.9	6.9	6.5	6.7	6.8	6.7	6.7
GDP/Capita (US$)	9745	11112	13640	15041	15868	19151	14462	15774	16572
Oil Price (US$/Barrel)									
West Texas Intermediate	31.1	41.5	56.6	66.1	72.3	99.7	62.0	75.0	80.0
Saudi average	26.9	34.7	49.5	60.5	68.1	93.4	60.5	71.3	74.8
Production (million b/d)	8.8	9.0	9.5	9.2	8.7	9.2	8.1	8.3	8.5
Current Account									
Current account balance	28.0	51.9	90.0	98.9	93.3	134.0	20.5	37.2	34.2
As percentage of GDP	13.1	20.7	28.5	27.8	24.3	28.2	5.6	9.0	7.6
Govt. Budget Balance									
Revenues	293	392	564	674	643	1101	505	618	672
Expenditures	257	285	346	393	466	520	550	603	621
Budget balance	36	107	218	280	177	581	-45	15	51
As percentage of GDP	4.5	11.4	18.4	21.0	12.2	32.6	-3.3	1.0	3.0
Govt. Domestic Debt									
Domestic (SR billion)	660	614	475	366	267	237	225	220	215
As percentage of GDP	82.0	65.4	40.2	27.4	18.5	13.3	16.3	16.3	12.8
Official Foreign Assets	97.1	127.9	195.5	273.4	359.8	502.0	461.1	491.1	519.0
External trade indicators (US$ billion)									
Oil export revenue	82.0	110.4	161.6	188.2	205.3	281.0	157.4	186.3	192.1
Total export revenue	93.0	125.7	180.4	210.9	233.1	313.3	184.5	215.6	223.7
Imports	33.9	41.1	53.8	63.0	81.5	100.6	80.4	86.8	95.5
Trade balance	59.1	84.6	126.6	147.8	151.6	212.7	104.1	128.8	128.2

Jadwa forecasts for 2010 and 2011. Saudi Arabian Monetary Agency for GDP, monetary and external trade indicators. Ministry of Finance for budgetary indicators, Central Department of Statistics and Jadwa estimates for oil, social and demographic indicators.

Source: Bourland and Gamble (Jadwa Investment) (2010).

The following two sections, 3.2.1 and 3.2.2, will discuss the background and the macro economy affecting Saudi Arabia.

3.7.1 Background

Prior to the discovery of oil in the 1930s, the Saudi economy revolved around pilgrimages to Mecca, located in the western area; subsistence farming, in the few agricultural regions in the southern and central regions; and pearling along the eastern coast. Oil rapidly replaced these activities and became the main source of revenue after the Second World War. In the early 1970s, the country embarked on a long-term programme which focused on utilising its substantial oil revenues to build an infrastructure for diversifying the economy into several areas besides oil.

During the 1970s and 1980s, the government established basic infrastructures and institutions. Throughout this period, the government allocated large investments to modernise the country, they did this by: building and owning the telecommunication networks; the electricity and power supplies; the water supplies; the transportation networks, including the roads, airlines and rail networks; as well as the healthcare and education infrastructures and systems.

The drop in the price of oil in the mid-1980s substantially reduced the country's revenues from oil and brought this phase of infrastructure expansion to an abrupt end. The reduction of government expenditure and the subsequent economic slowdown led many companies to seek to reduce their reliance on government contracts in favour of sectors that would benefit from population growth and private sector expansion (Bourland, 2002).

The Gulf War, 1990-1991, resulted in a substantial increase in defence-related spending, which in turn increased economic activity and spurred an increase in investment in the

local industries. During this period, the Kingdom moved, in some cases assisted by government subsidies, towards self-reliance in agricultural and dairy products, household goods and other items. The Gulf War period created substantial budget deficits, as had the mid to late 1980s. By 1995, significant fiscal imbalances had started to appear, particularly in terms of the increased debt burden, albeit both domestic and banking sources had played an essential role in lending funds.

The country stressed the development of non-oil industries by offering incentives to businesses which initiated industrial activities. According to the Ministry of Commerce and Industry (2009), in 1980 Saudi Arabia had 730 industrial plants with a total invested capital of US$ 6.3 billion. Whereas, by the end of 2008, the total number of existing companies in the Kingdom had risen to 21,700, with a total capital of US$ 170.9 billion. The distribution of capital by company type was as follows: 73.4% was accounted for by joint stock companies; 24.3% by limited liability companies; 0.6% by joint liability partnerships; and 1.7% by mixed liability partnerships. All of these companies require a contemporary banking sector to meet their banking needs.

The government sought to encourage foreign investment in Saudi Arabia. As a result, there are no foreign exchange controls and since 1986 the Saudi riyal (SR) was pegged to the United States dollar (US$), at a rate of 3.75 riyals to the dollar (SAMA, 45th Annual Report, 2009). In addition, a foreign direct investment law was issued which reduced the tax rates on corporate profits for foreign owners from a maximum of 45% to a maximum of 30%; this allowed foreigners to own land where they conducted their business, and sponsor their own foreign employees whilst also gaining access to other incentives, such as low-cost financing which was previously available only to majority

Saudi-owned entities. Consequently, the Kingdom's performance improved in terms of the indices measuring global competitiveness.

According to '*Doing Business in 2009*', issued by the IFC, the Kingdom ranked first on the Arab level and on the global level moved up from 23rd in 2007 to 16th in 2008 and was 13th in 2009. Moreover, in the Global Investment Report of the United Nations Conference on Trade and Development (UNCTAD, 2009), in 2008 the Kingdom had attracted SR 91 billion in foreign investments (US$ 24.3 billion) and was ranked 18th among 181 countries. In terms of the Global Competitiveness Index, the Kingdom's rank had increased to 27th in 2008 from 35th in 2007. This index was issued by the World Economic Forum (WEF) and covers a number of countries; it reached 134th in 2008 and it evaluated and measured 120 standards of competitiveness. In 2008, the Saudi Arabian General Investment Authority (SAGIA) issued 1,219 licences for establishing investment projects with an estimated investment capital of SR 70.3 billion (US$ 18.8 billion) (SAGIA, 2009). The foreign investors expected that there would be an existing banking sector which could meet their requirements.

For the past 30 years, the economic development was broadly governed by a number of five-year economic plans. The early plans emphasised the development of the Kingdom's infrastructure; while the later plans increasingly focused on human resources and private sector development and reducing the dependency on oil. According to the Ministry of Economy and Planning, the eighth development plan, which began in 2005, was the first five-year plan which was prepared in the context of a long-term development strategy with definite targets and objectives; the strategy was designed to provide a framework for four successive five-year plans, until 2024, aimed

at achieving a comprehensive socioeconomic vision by the end of the period (Ministry of Economy and Planning, 2005). The vision for the future of the Saudi economy was summarised by the Ministry of Economy and Planning (2005) as:

> *'By the will of Allah, by 2024, the Saudi economy will be a developed, thriving and prosperous economy based on sustainable foundations. It will extend rewarding work opportunities to all citizens, will have a high quality education and training system, excellent healthcare for all, and will provide all the necessary services to ensure the welfare of all citizens, while safeguarding social and religious values and preserving the national heritage.'*

3.7.2 Macro Economy

Table 3.1 shows that in 2009 the Saudi gross domestic product (GDP) totalled SR 1384.4 billion (US$ 369.2 billion), making it the largest economy in the Arab world; this is approximately 17.3% of the size of the UK economy and 2.7% of the US economy (The World Bank, 2010).

The Saudi economy is characterised by: capitalists and free markets; low inflation and low interest rates; no capital controls on movement of money in and out of the country; a stable currency; a well-developed infrastructure; and substantial private wealth. In short, it is an attractive place to conduct business (Bourland, 2002; US Saudi Arabian Business Council, 2002; Bourland and Gamble, 2010).

The government is now focused on the challenges of slow growth in GDP and a fast growing youth population, which is creating unemployment pressures. As a result, the government is undertaking broad-based economic reforms in an attempt to address these

challenges, as well as being focused on reducing the government's dependence on financial revenues from the oil reserves.

Zahid (2002) identifies three key issues facing the country, in the short and long-term. The first issue concerns demographics; the population is growing at a high rate and is expected to almost double to 29.7 million by the year 2020. So, the Saudi labour force is expected to grow from 3.17 million in 1999 to 8.26 million by 2020. This includes those who are currently unemployed; consequently, around 6 million jobs need to be found within the next 20 years. High population growth rates also mean that the proportion of young people in the country, the 'baby boomers', is rather high. Within the next two decades, the country needs to have sustained real GDP growth of over 3% per year, in order to raise the per capita income of the Saudi population, and to create a total of around 6 million jobs, primarily in the private sector which includes banks. If productivity levels are unchanged, it means that the private sector needs to grow at an average annual rate of above 4% per year in the next two decades. Therefore, Zahid (2002) suggests that the private sector must join with the government, and the domestic investors must join with the foreign investors to ensure this happens; however, how this will happen is still a question that needs addressing.

The second key issue focuses on infrastructure financing: the country needs to finance the infrastructure requirements of a growing population. The 'baby boomers' will need housing, transportation, education, electricity, water, healthcare and many other things. Thus, it is very important that the country can mobilise domestic and foreign financing, and the private as well as the public. Zahid's (2002) recommendation does not explain how this can be achieved.

The third issue facing the country is the negative impact of oil price volatility on the country's year-to-year economic performance. The swings in oil prices cause large fluctuations in the country's economic growth and government budget. Zahid (2002) believes that the country needs to reduce the share of oil within the economy (currently 3%), increase the country's non-oil exports (currently 9%) and increase the government's non-oil revenues (currently 20%). However, again he did not explain how and what role the banks could perform in assisting the country to resolve these issues.

The response to Zahid's concerns came from the 'strategic bases' presented in the eighth five-year plan (2005-2010), which will be continued until 2024 by the Ministry of Economy and Planning (2005, 2009), and include:

> *'Increase the share of Saudi manpower in total employment in various sectors, pay attention to upgrading their efficiency and productivity through training and re-training and continue to substitute Saudi manpower for non-Saudis.*
>
> *• Place emphasis on the welfare of women, upgrade their capabilities and remove the constraints that impede their participation in development activities, in line with the Islamic values and teachings.*
>
> *• Improve the quality of public services and increase their supply in line with the growing needs of the population, along with improving performance of the responsible agencies.*
>
> *• Continue efforts to maintain a climate conducive to enhancing private-sector participation in economic and social development, while intensifying government initiatives to encourage private, domestic and foreign investments and bolster competitiveness of domestic products.*
>
> *• Privatise additional public facilities, activities and services, while ensuring a rising share for citizens in asset ownership; all within a framework of competition and transparency.*
>
> *• Develop tourism and improve associated services and facilities, while conserving the environment and national heritage.*

• Adopt a population policy that takes into consideration quantitative and qualitative variables and geographical distribution and enhances correlations between population variables and the goals of sustainable development.

• Distribute resources and services among the regions of the Kingdom to ensure a reduction of development disparities among them and enhance their comparative and competitive advantages.

• Adopt fiscal and monetary policies that contribute to accelerating economic growth, achieving higher employment, and enhancing economic stability.

• Reduce public debt to a reasonable level and develop appropriate mechanisms for achieving financial stability in the long run.

• Encourage participation of private institutions and individuals in 30 charitable and voluntary activities in social work, healthcare and education, and improve such activities, and promote awareness of their importance.

• Sustain care for environmental protection, promote environmental regulations, protect and develop wildlife, and conserve natural resources and rationalise their utilisation.

• Promote integration among the Gulf Cooperation Council (GCC) countries and strengthen relations with Arab, Islamic and friendly countries, as well as with international economic blocs.'

All of the above objectives are connected in some way with the banking sector, such as: increase the share of Saudi manpower in total employment; privatise additional public facilities; improve the quality of public services; place emphasis on the welfare of women; reduce public debt; and promote integration among the (GCC) countries by strengthening relations with Arab, Islamic and friendly countries, as well as with international economic blocs. The relationship of these objectives with the banking sector and SISP success will be discussed in the later chapters which highlight the findings and their analyses.

3.8 Banking Sector

The banking sector in Saudi Arabia consists of the Saudi Arabian Monetary Agency (SAMA), 12 commercial banks, in addition to five banks which are branches owned by the GCC countries (National Bank of Kuwait, Muscat Bank, Emirates Bank, National Bank of Bahrain and the Gulf International Bank) and six major international and emerging market bank branches (which include the: Deutsche Bank, BNP Paribas, J. P. Morgan Chase N. A. Bank, State Bank of India, National Bank of Pakistan and the Ziraat Bankasi A. S.), as well as several domestic government-owned specialised credit institutions. The following three sections, 3.3.1 to 3.3.3, will explain the components of the banking sector in more detail.

3.8.1 Saudi Arabian Monetary Agency (SAMA)

Improved oil revenues in the early 1950s gave a unique opportunity for the Saudi government to accelerate long-term improvements in the Kingdom's international balance of payments. At the same time, the government realised the necessity of introducing fiscal and monetary reforms to speed up economic growth and development. The initial important step in this direction was the establishment of a central bank. A Royal Decree, No. 30/4/1046, dated 20th April 1952 was established which created a rudimentary central bank, the Saudi Arabian Monetary Agency (SAMA) (Abdeen and Shook, 1984).

SAMA has played a crucial role in the consolidation and development of the financial system. At the time of its establishment, the country did not have its own exclusive monetary system; foreign currencies circulated in the country as a medium of exchange, along with Saudi silver coins and Saudi bank notes had not yet been issued. Saudi

Arabia did not have its own bank and a number of foreign bank branches were conducting the banking business. One of the foremost tasks of SAMA, in its early stages, was to develop a Saudi currency. SAMA also significantly promoted the need for, and later the growth of, a national banking system.

From 1960 to 1972, SAMA focused on banking regulations against the background of expanding the banking business and in terms of the country's acceptance of full convertibility to the riyal in March 1961; this was in accordance with Article VIII of the Articles of Agreements of the International Monetary Fund (IMF). From 1973 to 1982, SAMA was preoccupied with containing the inflationary pressures of the booming economy, expanding the banking system and managing the massive foreign exchange reserves (SAMA, 1982). From the mid-1980s, SAMA's priorities focused on introducing financial market reforms and advising the government on managing public debt. Over the years, with the growth of the economy and expansion of the financial system, SAMA's responsibilities have increased considerably and, to further illustrate, SAMA became a member of the Bank for International Settlements.

Saudi Arabia's monetary policy aims to maintain the stability of prices and manage the Saudi riyal exchange rate. SAMA's main responsibilities, according to its annual reports until 2009 (SAMA, 2002, 2009), are as follows:

1. *Issues national currency, the Saudi riyal.*
2. *Acts as a banker to the government.*
3. *Supervises commercial banks.*
4. *Advises the government on public debt.*
5. *Manages the Kingdom's foreign exchange reserves.*
6. *Conducts monetary policy for promoting price and exchange rate stability.*
7. *Promotes the growth and ensures the soundness of the financial system.*

According to SAMA's Charter, two of its most important objectives included the issuing and strengthening of the Saudi currency by stabilising its internal and external

value and regulating the commercial banks. On the basis of a historic review, it is possible to review these objectives in terms of their achievements: the exchange rate has fluctuated in a very narrow band over the past six decades and has contributed to attaining the ultimate goal of the monetary policy by achieving price stability; in addition, the inflation rate has remained very low (Al-Sayari, 2007). SAMA's other major objective was to supervise and regulate the financial system; SAMA has followed prudent policies aimed at creating a sound, stable, solid and efficient financial system with a modern payment system (Al-Sayari, 2007). SAMA, in coordination with the Ministry of Finance, has ensured sustainability of macroeconomic stability through countercyclical fiscal measures, flexible monetary conditions and a stable exchange rate (Al-Jasser, 2010). Thus, the current research examines the influence of the roles of SAMA, as a central bank, on the success of SISP in the Saudi payment systems.

3.8.2 Commercial Banks

The Saudi Hollandi Bank was the first bank in Saudi Arabia; it was started in 1926 as the Netherlands Trading Society and was originally established with one office in Jeddah to serve the pilgrims from the Dutch East Indies (now Indonesia). For a period, as the only operating bank in the country, the Saudi Hollandi Bank served as the country's central bank by maintaining the country's gold stocks and processing the first oil-related transactions (Saudi Hollandi Bank, 2002). In 2006, the bank celebrated providing 80 years of loyal service to the citizens of Saudi Arabia. In 2007, a consortium of banks consisting of the Royal Bank of Scotland, Banco Santander and Fortis acquired ABN AMRO Bank and, as a consequence, a 40% shareholding in Saudi Hollandi Bank. In 2008, two members of the consortium, the Royal Bank of Scotland

and Fortis, received capital support from their respective governments; in effect, Saudi Hollandi Bank now has the British and Dutch governments as (indirect) minority shareholders, while 60% of the bank's shares continue to be held by Saudi investors (Saudi Hollandi Bank, 2010).

In Saudi Arabia, the commercial banks are the most active sector in the economy and consequently play a dynamic role in economic growth. Therefore, important consideration is given to their activities because the commercial banks' success, without doubt, represents the success of the national economy (Ahmed and Khababa, 1999).

The commercial banks in Saudi Arabia, as shown in Table 3.2, comprise 11 banks. Five of the banks are wholly Saudi: National Commercial Bank (1), Riyad Bank (2), Al-Rajhi Banking and Investment Corp (3), Samba Financial Group (4) and Bank Albilad (11). Six of the banks are largely Saudi but retain what is generally a small level of foreign participation: Banque Saudi Fransi (5), Arab National Bank (6), Saudi British Bank (7), Saudi Investment Bank (8), Bank Al-Jazira (9) and Saudi Hollandi Bank (10). There is also a new Saudi bank, the Alinma Bank; however, this bank is too new to be included in this study.

> *'The Saudi banks are doing very well, both in terms of profit, capital ratios and liquidity as well as in the advancement of technology'* (Timewell, 2002).

The following table, Table 3.2, shows the: tier one capital; total assets; capital/assets (%); loans and advances net; customer deposits; profit pre-tax; profit/capital (%); number of employees; BIS ratio (Bank for International Settlements standard ratio) (%); and the world ranking for each bank.

Table 3.2: Banks in Saudi Arabia: December 2008 ($ million)

Bank Name & Ranking Country	Tier 1 Capital	Total Assets	Capital/ Assets (%)	Profit Pre-Tax	Profit/ Capital %	BIS Capital Ratio%*	World Ranking **
National Commercial Bank (1)	6680	59147	11.29	562	7.71	16.6	120
Riyadh Bank (2)	6147	42574	14.44	703	14.56	16.1	131
Al Rajhi Banking & Investment Corp. (3)	5458	43981	12.41	1740	29.61	21.39	141
Samba Financial Group (4)	5342	47704	11.2	1188	23.46	14.1	146
Banque Saudi Fransi (5)	3617	33564	10.78	748	22.61	11.55	193
Arab National Bank (6)	3172	32349	9.81	665	22.24	14.14	206
Saudi British Bank (7)	2306	35110	6.57	779	30.92	11.24	268
Saudi Investment Bank (8)	1666	14292	11.66	141	8.14	13.71	341
Bank Al-Jazira (9)	1251	5750	21.75	214	17.1	33.51	427
Saudi Hollandi Bank (10)	1212	13443	9.02	117	9.96	15	438
Bank Albilad (11)	824	4280	19.24	33	4.09	24.19	558

* Key financial ratio measuring bank's capital adequacy.
** Ranking on Tier 1 capital
Source: Adapted from Lorenzon et al. (2009).

According to *The Banker* (2009) magazine, all of the Saudi banks were counted within the top 1000 banks of the world based on their Tier 1 capital in 2008; their ranking is shown in Table 3.2. In addition, the BIS ratio of Saudi commercial banks, at the end of June 2008, was about 19; this figure is approaching the standard of advanced countries.

According to *The Banker* (2009) magazine, the BIS ratio in the US, the EU and in Japan registered at 14.30%, 14.97% and 10.02%, respectively, as of the end of 2008.

The banking trends in the country can be explained as follows:

- The banks' credits to the private sector rose from about 46% (for the non-oil private sector's GDP) in 1993 to about 160% in 2009; this signifies the expanding role of the private sector in the economy, as well as the role of bank financing (Al-Jasser, 2010).
- The banking sector in Saudi Arabia differs considerably from that of industrial countries in some important respects. For example, about one third of the total deposits are non-interest bearing, making it easier for banks to develop their asset bases as well as making liabilities less sensitive to interest-rate movements (Sherani, 1997).
- The new Gas-Initiative projects, whereby the international oil companies have been invited to participate in the development of the local gas and allied infrastructure businesses, will also be a key source of revenue in terms of project financing over the coming years (Graffenried, 2002).
- The banks have seen improvements in all sectors; however, the key area of excitement for bankers concerns the retail area, where consumer loans and Islamic-related products are in enormous demand (Graffenried, 2002; Shayif, 2002; Timewell, 2002).
- Al-Suhaimi (2002) stated that: *'The regulator is encouraging both traditional (commission or interest-driven) products as well as Islamic products, both modes of finance can exist together'* (Timewell, 2002).

- The forthcoming capital market laws and privatisation efforts can bring significant benefits for the banks (Timewell, 2002).
- The banks are focusing on key growth markets, such as women's banking. In addition, some women are now coming into middle management, a major step in the country (Graffenried, 2002).

The regulator did not push the banking sector to change to Islamic banking; however, the force of the market directs the banks to exercise several functions of investment, which are accepted by the individuals. At the same time, the need for women's banking is becoming essential.

The key factor fuelling the retail expansion is from the banks' growing confidence in, and the appetite for consumer loans. The relatively new interbank SARIE transfer system has enabled salaries, especially those of government employees, to be assigned to banks, thus enabling credit to be given with greater insurance of repayment (Timewell, 2002).

It is still believed that more can be done, by banks, to help employ Saudis and to help reach a sustained growth rate. For example, the private sector, including banks, should invest more in: manufacturing and hi-tech industries; raising efficiency and reducing costs; bringing in modern management; building shareholder value as well as market share; introducing more performance-based incentives; taking the initiative in on-the-job training; building a partnership with the education sector to train and employ Saudis; and in expanding partnerships with foreign investors to transfer technology and know how (Zahid, 2002).

3.8.3 Domestic Government-Owned Specialised Credit Institutions

In addition to the commercial banks, there are five domestic government-owned specialised credit institutions which provide loans and advances on soft terms for special purposes to Saudi individuals and companies. These include the Saudi Agricultural Bank, the Public Investment Fund, the Saudi Industrial Development Fund, the Saudi Credit Bank and the Real Estate Development Fund.

The Saudi Agricultural Bank was established in 1963 and provides both medium and long-term loans to agricultural companies and farmers. The Public Investment Fund arranges loans and equity participation to meet the medium and long-term financial needs of industrial and commercial projects, such as electric power development. It also holds the government's equity shares in several joint stock companies, including SABIC, the National Commercial Bank and the Riyad Bank. The Real Estate Development Fund was established in 1974 and provides loans to individual Saudis to assist them in the purchasing of housing. The Saudi Industrial Development Fund provides medium and long-term loans, of up to 50% of the total cost of an industrial project, and it also provides marketing, financial and technical advice. These main specialised institutions, their establishment year, their capital and outstanding loans, at the end of 2009, are presented in Table 3.3.

The activities of these institutions should be reviewed with the privatisation strategy for Saudi Arabia because they are similar to those of the commercial banks.

Table 3.3: Specialised Government Credit Institutions

	Saudi Agricultural Bank	Saudi Credit Bank	Public Investment Fund	Saudi Industrial Development Fund	Real Estate Development Fund	Total
Establishment Year	1963	1971	1974	1973	1974	-
Capital (US$ million)	223	2093	1203	-	849	-
Outstanding Loans in 2009 (US$ million)	2515	3461	9898	4866	20530	41270

Source: SAMA (2009).

For the purpose of this study, the definition of the banking sector includes only the banks which participate in SISP for the payment systems, which are SAMA and the 11 commercial banks identified in Table 3.2.

3.9 Technology in the Banking Sector

The financial services sector is a leading global user of information systems and information technology (Jacoby, 1997). All major banks, worldwide, use important telecommunications networks, such as SWIFT (the Society for Worldwide Interbank Financial Telecommunications), for international payments.

In addition, the financial markets, such as the London and New York Stock Exchanges, are highly automated; the Canadian, Parisian and Brussels Stock Exchanges also use automated trading systems. The deregulation of London's Exchange in 1986 and the associated innovative use of technology show how information systems can dramatically force the restructuring of firms and industries. According to Clemons

(1991), up to 25% of all French turnover moved from Paris to London and as much as 85% of important Swedish stocks moved from Stockholm to London. Much of this movement occurred because it was no longer necessary to be physically on the trading floor in order to trade. Just a few years later, the crash of the London Stock Exchange's TAURUS system provided a dramatic example of how vulnerable the financial sector has become to IS failures (Murray, 1995).

The spending on information technology in banks continues to grow. A report by Bansal in Celent Communications (2002), which examined the levels of IT spending and the business trends driving IT investments, forecasted the total technology spend to be more than US$ 34bn in 2002 in USA banks. It suggests that the large banks can spend more than 20% of non-interest expenses on IT, compared with 12-15% for medium-sized institutions. This could be as a result of the larger number of business lines, products and services that need supporting by the large global banks, and also due to the extent of their branch network (Bansal, 2002).

The Saudi banking sector, like other banking sectors across the world, invested largely in order to benefit from using technology. For the last twenty years, it developed several systems to improve the process of the payment, clearing and settlement systems throughout the country; this shaped the payment infrastructure and the stock market systems in Saudi Arabia. In the following sections, 3.4.1 to 3.4.3, these main systems will be reviewed.

3.9.1 Management Information Systems (MIS)

In 1984, the multi-user MIS was implemented at SAMA. This MIS involved a set of computerised processes which provided the core for both the financial and administrative functions by integrating all of the operational business activities in the head office and the branches; in 1999 this was connected with the Ministry of Finance and was last updated in 2009. The MIS consists of 3,000,000 lines of programming code and has 14 applications, each corresponding to a major business activity within SAMA, which feed into a central accounting module which then communicates with the external world through a central message switching facility.

The MIS derived from SAMA's information needs and is dependent on capturing internal and external data through wide and local area networks (WANs and LANs). The MIS is an integrated and centralised system: the database is centralised, which avoids redundancy of data and provides facilities to SAMA's senior management, who can request and obtain reports based upon the information collected through all the systems (SAMA, Computer Dept., 2002; 2009).

The MIS presents the major functions; however, there were key problem areas encountered during the planning, development, and implementation stages of the system. These were user-related communication issues and manual procedure problems. First, in terms of user-related problems, most users were at best ambivalent or at worst disinterested. The users: were unable to take responsibility for making decisions; did not understand the objectives of automation; encountered language barriers; feared the loss of power; were nearing retirement age; were unaware of any incentive plans for the end users; and were given training too late (during the testing and implementation phase). In

addition, most users resisted the changes and improvements in favour of their manual procedures (they rejecting the concept of performing electronic validations vs. manual signatures). Further, the documents were too large to review and were too difficult for the average user to comprehend, which led to delays in delivering these procedures. The final user-related problem relates to the fact that users were affected and influenced by the conflicts that occurred between the technical employees of SAMA and the contractors who developed the system. This led to the loss of enthusiasm of users towards the project.

Second, communication problems were reported. The top management insufficiently prepared them for the involvement required to make and take the necessary decisions. There were no formal procedures or mechanisms to resolve conflicts between the technical employees and the end-user departments. The internal auditing employees were also not involved from the start or they were not interested in becoming involved; this created a gap which resulted in the use of external auditing firms for auditing the MIS. In addition, the branches and external entities related to the business processes were not considered. Finally, manual procedure problems were identified because the impact of the application processes on the existing manual transaction procedures was only assessed at a late stage in the project (just before implementation) due to the absence of a high-level committee that should have been accountable for re-organising the business processes. Furthermore, no new operating rules or regulations were formally published or disseminated prior to implementation.

3.9.2 National Payments Systems

In 1985, SAMA took the lead in developing, enhancing and in the day-to-day operating of the payment, clearing and settlement systems in Saudi Arabia, which form the country's payment infrastructure. For this reason, SAMA's Banking Technology Department (BTD) was introduced to provide support and services to its customers and to be a role model and leader in the provision and use of technology and services for the promotion of the financial industry (SAMA, BTD, 2002). According to SAMA BTD (2002), the objective of the payment system strategy was to develop modern payment systems to support economic development, expand the use of bank money, protect the bank's franchise and provide convenience to the public. These systems are integrated, safe, cost efficient and expandable. The SAMA BTD (2001) suggested that countries that failed to create efficient national payment systems would become less competitive and more vulnerable to global market disruptions. The following sections, 3.4.2.1 to 3.4.2.3, will discuss the main systems.

3.9.2.1 Automated Clearing House (ACH)

The automated clearing house (ACH) system was started, in terms of its planning and development, in 1985, implemented in 1987, upgraded in 1993 and finally enhanced in 2008 (SAMA, BTD, 2008). The clearing centres were located in three of SAMA's main branches in Riyadh, the capital; Jeddah, the commercial city; and Dammam, close to Aramco. Standards for the issuing of cheques were introduced to the banks in 1993 and all of them then started to print their own cheques either in-house or by private printing press companies. Table 3.4 shows the total values and the number of cheques cleared mainly by the ACH in the last five years.

Table 3.4: Bank Clearings (Commercial and Personal Cheques)

Period	No. of Cheques	Total Value (Million US$)
2005	6,440,221	97959
2006	6,191,433	100402
2007	6,139,180	117749
2008	6,352,671	140293
2009	6,198,149	137194

Source: SAMA, 45th Annual Report (2009).

3.9.2.2 Saudi Payments Network (SPAN)

According to *The Banker* magazine (2002), the main benefits of an ATM network, formulated from information from five banks from around the world, are:

- *Supplies 24/7 accessibility to clients.*
- *Presents 'anywhere banking'.*
- *Requires bank to stay abreast of its competition.*
- *Path to provide many facilities: mini-statements, utility bill payments, etc.*
- *Takes the pressure off the counters and decreases paperwork.*
- *Creates possibilities both for cost reduction and for improving the level and quality of the services in the branch.*
- *Cuts the number of cheques processed.*
- *Enhances bank's image by projecting a bank using new and advanced technology to improve its service.*

In Saudi Arabia, the Saudi Payments Network (SPAN) is the National Automated Teller Machine (ATM) and Points of Sale (PoS) network that connects all of the Saudi banks and it therefore provides a common service point to the Kingdom. The objectives of establishing the SPAN network have been very significant for the Saudi banking sector (SAMA, 2002). Firstly, SPAN aimed to encourage Saudi citizens and foreign residents to use the banking system; this includes electronic access to their funds at remote locations, thereby reducing the bank notes in circulation. The network has facilitated transaction availability regardless of terminal ownership. The movement towards electronic transactions has reduced the overall demand for bank notes and has increased

the uptake in banking facilities, which has directly led to an increase in deposits. SPAN has increased the efficiency in the banking sector by avoiding ineffective competition at the transaction delivery points. Table 3.5 shows the growth in: the number of ATM machines, cards issued, transactions, and cash withdrawals.

Table 3.5: Automated Teller Machines Statistics

End of Period	Number of ATMs	Number of Cards Issued	Number of Transactions			Cash Withdrawals (Million SR)		
			SPAN	Banks	Total	SPAN	Banks	Total
2005	4,588	8,041,886	205,444,945	327,758,357	533,203,302	108,225	137,677	245,902
2006	6,079	9,971,521	248,567,219	378,144,594	626,711,813	128,761	150,341	279,101
2007	7,543	11,104,901	278,913,211	377,577,939	656,491,150	148,050	160,684	308,734
2008	8,893	12,366,441	338,354,626	533,177,986	871,532,612	184,442	194,567	379,009
2009	9,950	13,712,905	372,974,148	568,727,018	941,701,166	197,769	213,516	411,285

Source: SAMA (2010).

Since the launch of SPAN in 1990, it has become increasingly obvious that its initial objective has been accomplished. For instance, the total number of transactions, SPAN cards, PoS terminals and ATMs has increased annually. The user community, including citizens and residents, has come to rely on SPAN services (SAMA, 2002). SPAN provides other banking services, too, including supporting international association transactions, such as Visa and MasterCard, together with a full range of credit and debit card transactions at ATM and PoS terminals (SAMA, 2009).

SPAN's strategic objectives, as stated and then enhanced by SAMA BTD (2002, 2008), are:

- *Better services and convenience.*
- *Effective use of ATMs.*
- *Minimise costs.*
- *Encourage banking habits.*
- *Reduce cash in circulation.*
- *Increase purchasing power.*
- *Efficiency for retailer.*
- *Larger balances at banks.*

The question which would be asked at this point is to what extent have these objectives have achieved?

3.9.2.3 Saudi Arabian Riyal Interbank Express (SARIE)

According to SAMA BTD (2008), the Saudi Arabian Riyal Interbank Express (SARIE) is a state-of-the-art interbank payment and settlement system which began operating on 14th May 1997, crowning a decade of rapid progression and achievement for Saudi Arabia in the field of electronic banking. A study of the system was made in cooperation with the Bank for International Settlements Federal Reserve, the Bank of England, the Banque de France, the Banca d' Italia and the Swiss National Bank.

The new SARIE system, designed on the concept of Real-Time Gross Settlement (RTGS), will modernise electronic banking and commerce in the country by providing the backbone for a number of advanced and sophisticated payment and settlement systems already in place. These include the ACH, an electronic cheque clearing system, and the SPAN network, which links all ATM and EFTPOS terminals, as well as the Electronic Securities Information System (ESIS) and electronic shares trading and settlement systems.

The key objectives of SARIE include the following: providing the foundation for improved banking products and services; ensuring greater efficiency and liquidity in the banking system; reducing risk and establishing a sound, effective, risk management

process; controlling the costs of the financial industry; providing support for international fund transfers; enhancing the financial performance of the commercial sector; and laying the technical and procedural foundation for future developments, such as electronic commerce.

Some examples of SARIE's benefits were identified by SAMA BTD (2002), as follows:

- *Bank Transfers*. Before SARIE, transfers between banks were carried out on a daily basis through SAMA, using traditional methods such as telex, fax or even cheques. Using SARIE, banks are now able to deal online through their account with SAMA, receiving and transferring funds securely, automatically and rapidly. As a result, banks now know their exact balance with SAMA at any given time and have a record of scheduled payments for up to 14 days. To gain more benefits from SARIE, banks have now linked their computer systems to SARIE so that their customers can transfer money from one bank to another in seconds.

- *Direct Debits*. Field research has revealed that paying public utility bills is one of the major causes of high traffic and extensive queues at bank branches at certain times of the day. This creates an unacceptable burden on both customers and bank staff. With SARIE, it is now possible to settle these accounts without the customer having to physically visit their bank. A three party arrangement permits a bank to directly debit the customer's account and transfer funds to the utility's bank account via SARIE.

- *Bulk Payments*. Bulk payments of the same nature and for the same purpose can now be consolidated into one single transaction. This can be executed on the same day or up to 14 days in the future. These are ideal for making salary payments, particularly for all government and commercial organisations with large numbers of employees. Issuing individual cheques is a slow and laborious process, which can now be automated so that salaries can be electronically transferred directly from the employer's to the employee's bank account. Paperwork is confined to a statement confirming that the transaction has taken place.

The following two tables show the values of the SARIE transactions (Table 3.6), as well as the number of transactions (Table 3.7), based on the customer and interbank payments, as well as the single and bulk payments. At the end of 1998, SARIE had performed 111,633 transactions, by 2009 this had jumped to 32,829,143. The value of these transactions increased from SR 5,246,430 (SR 5.2 million) in 1998 to SR 61,234,165 (SR 61.2 million) in 2009.

Table 3.6: Value of Transactions for SARIE System (Million SR)

Period	Customer Payments			Interbank Payments			Others * (3)	Total (1+2+3)
	Bulk	Single	Total (1)	Bulk	Single	Total (2)		
2005	379,637	1,011,538	1,391,175	116,589	8,629,928	8,746,517	8,450	10,146,142
2006	441,327	1,204,279	1,645,606	107,618	12,077,171	12,184,789	9,563	13,839,959
2007	550,269	1,320,991	1,871,260	72,670	31,730,199	31,802,869	28,720	33,702,849
2008	719,303	2,092,324	2,811,628	79,047	32,979,135	33,058,182	35,946	35,905,756
2009	716,980	2,176,457	2,893,437	42,404	58,280,884	58,323,287	17,440	61,234,165

* Amounts include direct debits and SAMA claim on banks.
Source: SAMA (2009).

Table 3.7: Number of Transactions for SARIE System

Period	Customer Payments			Interbank Payments			Others * (3)	Total (1+2+3)
	Bulk	Single	Total (1)	Bulk	Single	Total (2)		
2005	16,799,123	1,146,879	17,946,002	33,075	163,934	197,009	284,878	18,427,889
2006	18,516,565	1,494,688	20,011,253	52,588	195,700	248,288	527,226	20,786,767
2007	21,766,617	1,721,542	23,488,159	61,136	244,912	306,048	1,038,765	24,832,972
2008	27,221,118	2,332,241	29,553,359	63,151	262,510	325,661	1,756,664	31,635,684
2009	27,982,379	2,621,772	30,604,151	77,232	265,862	343,094	1,881,898	32,829,143

* Amounts include direct debits and SAMA claim on banks.
Source: SAMA (2009).

While there are many observable and potential benefits of SARIE, Al-Jarf (2010) presents some of the most important immediate benefits to the banking system which affect the following areas. Banks are now able to deal online through their account with SAMA, receiving and transferring funds securely, automatically and rapidly. It is now possible to settle public utility bills without the customers' having to physically visit their bank. A three-party arrangement permits a bank to directly debit the customer's account and transfer funds to the utility's bank account via SARIE. In addition, all the payment systems between banks have been connected together, enabling clients to transfer money to and from any bank account within Saudi Arabia, automatically, easily, safely and quickly.

The SARIE system permits electronic, safe salary transfers; in this system, the salary is transferred from the government sector, or the company owner, to the recipient's

individual bank account; this eliminates the need to personally visit the bank. In addition, this expands the possibility of appreciating the benefits provided by SPAN. SARIE allows any bank to issue a credit note against the client's account and allows the transfer of money to the beneficiary's account at any bank within the Kingdom. An upper limit to the regular payment deduction is set by the client. All of these previously described SARIE services are offered at competitive prices.

3.9.3 Tadawul – Saudi Stock Market System

Another example which focuses on the cooperation between SAMA and the commercial banks is in the area of developing and implementing stock market systems. The mid-1930s witnessed the first Saudi joint stock company in its initial stages when the first company, the Arab Automobile Company, was established. Fourteen public companies had survived by 1975. At this time, large corporations and joint venture banks were established as a result of the economic growth expansion and the Saudisation programme for foreign banks during the 1970s. During this period, major share offerings were made to the public.

The market remained informal until the early 1980s when the government embarked on a rapid development programme. In 1984, a Ministerial Committee, consisting of the Ministry of Finance and National Economy, the Ministry of Commerce and SAMA, was formed to regulate and develop the market. SAMA was the government body charged with regulating and monitoring market activities until the Capital Market Authority (CMA) was established in July 2003 under the Capital Market Law (CML) by Royal Decree (No. M/30). The CMA is the sole regulator and supervisor of the capital market and is responsible for issuing the required rules and regulations to protect investors and ensure fairness and efficiency in the market. The Council of Ministers approved, in March 2007, the formation of the Saudi Stock Exchange (Tadawul)

Company. This was in accordance with Article 20 of the Capital Market Law which established Tadawul as the joint stock company (Tadawul, 2009).

Share trading intermediation was restricted to the commercial banks in an aim to improve the regulatory framework. In 1984, the Saudi Share Registration Company (SSRC) was established by the commercial banks. The company provides central registration facilities for joint stock companies and settles and clears all equity transactions. Automated clearing and settlement was introduced in 1989. The Electronic Securities Information System (ESIS), developed and operated by SAMA, was introduced in 1990 and Tadawul, the next generation of securities' trading, clearing and settlement, has been in operation since 6th October 2001.

The equity market grew between 1990 and 2001 and the number of transactions, volume and value traded, increased dramatically. Market capitalisation increased by 183% and the all share index increased by 148% (SAMA, Tadawul, 2002). Table 3.7 provides a summary of the market statistics since 1990. The Saudi market is the largest stock market in the Middle East (Al-Mubarak, 2001) and has a capital of over US$ 73 billion.

Table 3.8: Summary of Share Market Indicators (2005-2009)

Year	Number of Transactions	Number of Shares Traded (Million)	Market Value of Shares (Billion SR)	Number of Companies	General Share Price Index (1999=1000)
2005	46,607,951	12,281	2,438	77	16,713
2006	96,095,920	54,437	1,226	86	7,933
2007	65,665,500	57,829	1,946	111	11,039
2008	52,135,929	58,727	924	127	4,803
2009	36,458,326	56,685	1,196	135	6,122

Source: Tadawul – Capital Market Authority (2010).

By the end of 1990, Tadawul had processed 85,298 transactions, which jumped significantly to 36,458,326 transactions in 2009; the value of these transactions also increased retrospectively from SR 1,174,196,129 in 1990 to SR 1,196 billion in 2009 (Tadawul, 2010).

According to Tadawul (2002, 2009), the main function of the system was to serve the trading, clearing and settlement of shares in Saudi Arabia and to provide a continuous, order driven market, with up to the minute dissemination of information concerning: price, volume and company information. It concentrates all local equity trading into one single market which offers an efficient and short trading cycle. The transfer of ownership occurs immediately after matching the buy and sell orders. Trading strategies dictate and investors can buy and sell multiple times throughout the day. Tadawul provides accurate and speedy settlements, and 100% of all trades settle on the day of execution. Buy and sell orders are processed from order entry to transfer of ownership thus providing support for order delivery mechanisms such as the Internet.

3.10 Research Constructs

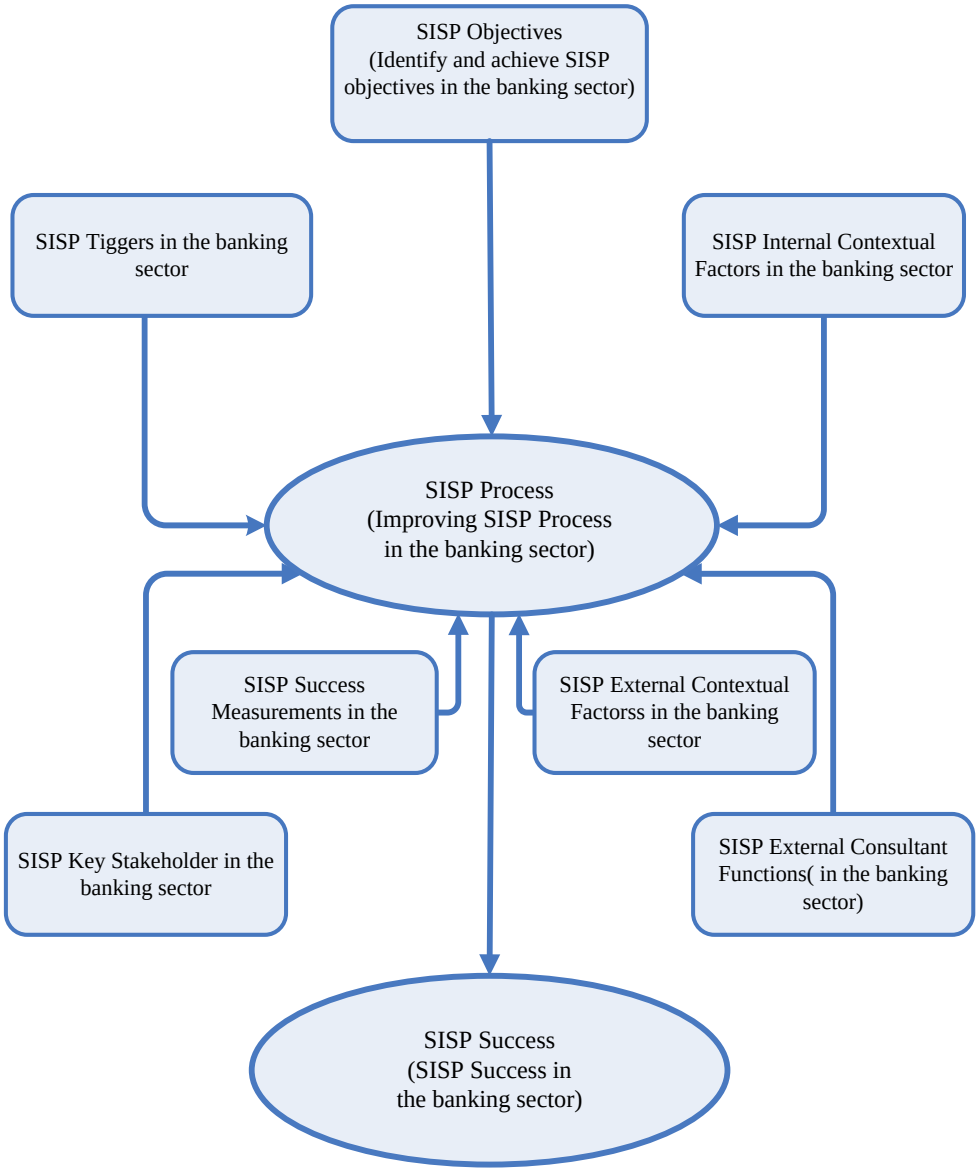
Based on the above sections and the previous chapter (Chapter 2), the key research constructs are seen to be as follows:

- SISP Process
- SISP Success
- SISP Objectives
- SISP Internal Contextual Factors
  - Availability of business strategy

  - Alignment of information strategy with business strategy
  - Members of strategic information systems planning team
  - Top management commitment to SISP
  - Top management support for SISP
- SISP External Contextual Factors
  - National culture
  - Government and public organisations
  - International institutions
  - Competitors
  - Partners
- SISP External Consultant Functions
- SISP Key Stakeholder Roles
- SISP Success Measurements
- SISP Triggers

The relationship between these constructs is illustrated in the following diagram (Figure 3.1):

Figure 3.1: Research Constructs



3.11 Summary

The intention of the current research is to examine the impact of certain external contextual factors on the success of SISP in the banking sector. First, the national culture was reviewed and related government and public organisations were discussed. The connected international institutions were investigated, then the linked competitors were reviewed and the allied partners were evaluated. In Saudi Arabia, SAMA and the banks have invested substantial resources in upgrading the Saudi banking technology by developing several strategic information systems. Most of these have been developed with the cooperation of SAMA and commercial banks to provide individuals and companies with the quality and convenience of modern technology-based facilities for their day-to-day liquidity and commercial relationships. The Saudi economy benefits from the trading thrust arising from greater flexibility in time and space and the lower cost of banking transactions. Strategic planning for information systems is central to achieving the strategic objectives of banks and should therefore be regarded as a core capability. Based on Chapters 2 and 3 the key research constructs are: SISP success, SISP process, SISP objectives, SISP internal contextual factors, SISP external contextual factors, SISP external consultants functions, SISP key stakeholder roles, SISP success measurements and SISP triggers.

CHAPTER 4
Research Methodology and Design

4.1 Introduction

This chapter aims to develop an argument for an appropriate methodological programme in order to accomplish the present research project. The design should take into account:

- The research objectives and questions
- The nature of the banking sector environment and its confidentiality
- The range of potential research methods that could be applied in this research

Gilbert (1993) stated that there are three major elements in social research: the construction of theory, the design of methods for gathering data and the collection of data and their analysis. If the research is to yield fruitful results, all of these elements must be performed effectively. This chapter will briefly review the literature on the available research designs and methods; it will then discuss and explain the chosen research design and methodology. Data collection methods, phases of fieldwork, procedures and problems encountered for the specific phase of the fieldwork, as well as the actual data collected, will be elaborated. The collected data will then be analysed in the following two chapters, Chapters 5 and 6.

According to Nachmias and Nachmias (1996), the role of research is described as “An attempt to increase the sum of what is known, usually referred to as ‘a body of

knowledge', by the discovery of new facts or relationships through a process of systemic scientific inquiry, the research process". Therefore the current research needs to be able to convincingly argue that something new and of value has been added to the SISP body of knowledge. This will be accomplished by identifying the SISP objectives in the banking sector including the Saudi one, investigating the internal and external contextual factors affecting SISP success, examining the functions of the external consultant's impact on SISP, identifying SISP success measurements in the banking sector and by exploring the key stakeholder roles which impact on SISP success in the banking sector.

For this purpose, the chapter will be organised as follows. Firstly, the research philosophy will be discussed. The following sections will then examine, in turn, research approaches, research strategies and the appropriate approaches for the current research. Information concerning data collection methods and data analysis will then be presented. After this, reliability and validity will be explained and ethical issues concerning this research will be discussed. Finally, a conclusion will be presented which will summarise the main elements in the chapter.

4.2 Research Philosophy

Collier (1994:17) asks the question "why philosophy?" and then answers it thus:

> *"A good part of the answer to the question 'why philosophy?' is that the alternative to philosophy is not no philosophy, but bad philosophy. The 'un-philosophical' person has an unconscious philosophy, which they apply in their practice-whether of science or politics or daily life."*

As Gramsci (1971: 323, in Dobson, 2001: 199) argues *"…everyone is a philosopher, though in his own way unconsciously, since even in the slightest manifestation of any intellectual activity whatever, in 'language' there is contained a specific conception of the world"*.

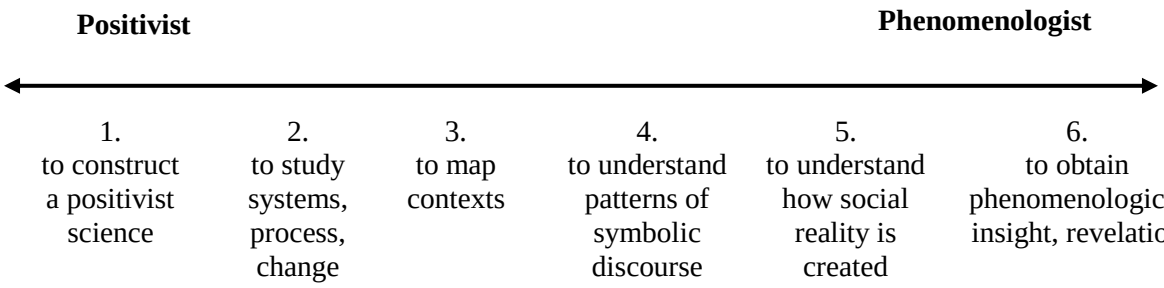
With the understanding of 'why philosophy', it is now important to discuss the philosophy behind this research. Generally, there are two major prevailing schools of research philosophy that think differently about the development of knowledge. Although these two opposite paradigms have several names, including *'scepticism vs. conviction'* (Jankowicz, 2000), *'objectivist vs. subjectivist'* (Morgan and Smircich, 1980), *'positivism vs. constructivism'* (Giere, 1979; Schon, 1983), '*positivistic vs. humanistic'* (Gummesson, 2000), this research will use *'positivism vs. phenomenology'* (Saunders et al., 2003; Collis and Hussey, 2003; Smith, 1998), since these approaches seem to be the most dominant in business and management research.

Positivistic researchers assume that *"the researcher is independent of and neither affects nor is affected by the subject of the research"* (Remenyi et al., 2000: 33). Therefore they tend to produce quantitative data, use large samples and are concerned with hypothesis testing. In addition, data in this paradigm tend to be highly specific and precise, and while reliability is high, validity is low (Collis and Hussey, 2003). In contrast, researchers with the phenomenological assumption have the view that *"rich insights into this complex world are lost if such complexity is reduced entirely to a series of law-like generalisations"* (Saunders et al., 2003: 86). Hence, they tend to produce qualitative data, use small samples and are concerned with generating theories.

Also, in the phenomenological paradigm, data are rich and subjective, and while reliability is low, validity is high (Collis and Hussey, 2003).

Although adopting one paradigm in the first instance can be of great importance to choosing subsequent methodologies, not all researchers can operate within their pure forms, especially in business and management studies. Indeed, Saunders et al. (2003) encourage researchers to think in a more flexible way about the research philosophy they adopt. Similarly, Morgan and Smircich (1980) introduce identifiable stages on the positivism-phenomenology continuum (see Figure 4.1) and within this concept it is possible to find a mixture of the two extremes.

Figure 4.1: Positivism-Phenomenology Continuum of Basic Epistemological Stance



Source: Adapted from Morgan and Smircich (1980:492)

To take the current research as an example, it is concerned with testing quantitative data and strongly believes that SISP objectives, SISP internal factors, SISP external consultant functions, SISP external factors, measurements of SISP success, SISP key stakeholders' roles and SISP triggers could be factors that could be measured and that a case study could also be conducted that confirms and explains these factors and which can identify *"the details of the situation to understand the reality"* (Remenyi et al.,

2000:35). Mostly, the current research would be categorised closer to positivist on the continuum presented in Figure 4.1.

This current research will be conducted within IS in the banking sector and the positivist approach is most commonly used in IS research. To illustrate, 97% of IS research articles use a positivist framework (Mingers, 1997:761) and it is confirmed that there is dominance of positivism in IS research (Sahay, 1997:232). In addition, Yin (1994:13) is an advocate of positivist case study research. Since this current research uses the positivist framework, it is reasonable to discuss one of the six general assumptions of positivism, as presented by Smith (1998), *'phenomenalism'*, in relation to the current research and its environment.

Smith (1998) describes phenomenalism as the assumption that only knowledge gained through observed experiences can be taken seriously. If something cannot be directly experienced it is said to be *'metaphysical'* and beyond our physical senses (Smith 1998: 76). Thus, if we cannot touch it, see it, hear it, taste it or smell it, then an object cannot be said to exist except in so far as it is an idea of something; for example, *'love'* is something that exists only in people's minds and cannot be physically experienced. This current research takes place in Saudi Arabia, a Muslim country. Muslims derive their social system from the teachings of the Qur'an (which Muslims believe is a book that was revealed by Allah (God) to Muhammad in seventh century Arabia), and from the Sunnah (the recorded sayings and behaviour of Muhammad) (Rice, 1999: 346). Therefore, to illustrate, an example related to phenomenalism that can be seen in The Holy Qur'an is:

Behold! Abraham said:
"My Lord! Show me how Thou givest life to the dead."

He said: "Dost thou not
Then believe?" He said:
"Yea! But to satisfy my own heart."
He said: "Take four birds;
Tie them (cut them into pieces),
Then put a portion of them:
On every hill, and call to them:
They will come to thee
(Flying) with speed.
Then know that Allah (God)
Is Exalted in Power, Wise." (Ali, 1989: 119).

Abraham had complete faith in God's power but he wanted, with God's permission, to give an explanation of that faith to his own heart and mind.

The current research plans to interview the top management of the banking sector to discuss their concerns and contribution to SISP, meet with the IT directors to hear from them about the support that they are getting from the top management and, if it is in their expectation level, send the questionnaire to the employees to see the benefits that they can get from SISP; to visit one or two consulting enterprises that supported the banks to implement SISP, and obtain information about their experiences during the implementation period. Finally, to analyse all of these points to obtain researched answers. Consequently, phenomenalism, as a component of positivism, is useful and useable for this current research.

4.3 Research Approaches

Babbie (1989), May (1997), Nachmias and Nachmias (1996) and Remenyi et al. (1998) state that scientific research is comprised of two major elements: the theoretical and the empirical. They state that a system that links these two elements can improve the role of social science through deduction and induction. This link leads to two kinds of research

approaches: theory-then-research and research-then-theory. These approaches can also be described by other terms like deduction and induction or grounded and grand (May, 1997; Nachmias and Nachmias, 1996).

Research approaches can be *'deductive'* or *'inductive'*, or *'the combination of the two'* (Sekaran, 2003: 27). The major differences between the two approaches are listed in Table 4.1. Deductive reasoning works from the more general to the more specific. Sometimes, this is informally called a *'top-down'* approach. This begins with the formulation of a theory about the topic of interest. This is then narrowed down into more specific hypotheses that can be tested. This would be narrowed down even further by collecting observations to address the hypotheses; ultimately, this would lead to the testing of the hypotheses with specific data, a confirmation (or not) of the original theories.

In contrast, inductive reasoning works the other way, moving from specific observations to broader generalisations and theories; informally, it is sometimes called a *'bottom-up'* approach. In inductive reasoning, from specific observations and measures, patterns and regularities are detected and some tentative hypotheses are formulated for exploration and, finally, the researcher will develop some general conclusions or theories.

These two methods of reasoning have a very different 'feel' to them when conducting research. Inductive reasoning, by its very nature, is more open-ended and exploratory, especially at the beginning. Deductive reasoning is narrower in nature and is concerned with testing or confirming specific hypotheses. Even though a particular study may look as if it is purely deductive (for instance, an experiment is designed to test the

hypothesised effects of some treatment or some outcome), most social research involves both inductive and deductive reasoning processes at some time in the project.

Table 4.1: Major Differences between Deductive and Inductive Approaches

Deductive Approach Emphasises…	Inductive Approach Emphasises…
Moving from theory to data.	Close understanding of research context.
Need to explain causal relationships between variables.	
Collection of quantitative data.	Collection of qualitative data
Highly structured approach.	More flexible structure to permit changes of research emphasis as research progresses.
Researcher's independence of what is being researched.	Relation that researcher is part of research process.
Necessity to select samples of sufficient size in order to generalise conclusions.	Less concern with need to generalise.

Source: Saunders et al. (2003: 89)

In the most constrained experiments, the researchers may observe patterns in the data that lead them to develop new theories (Trochim, 2006).

The current research investigates the SISP theory in the banking sector. Thus, it is useful to use a deductive approach, since deductive reasoning works from the general to the more specific. It moves from a theory about the topic of interest, which is being broadly used, and then narrows that down into a more specific sector that can be tested.

4.4 Research Strategies

The research strategy is an important task for the researchers to plan because it aims to clarify not only the research objectives but also the available data sources and constraints (including the place, time, ethical issues and budget, etc.). Among the various research strategies are surveys, experiments, case studies, grounded theories and

action researches (Saunders et al., 2003). The current research chooses to use a combination of surveys and case studies to achieve the research objectives in SISP and gain the advantages of both strategies. The advantages of using a survey are that it enables large amounts of data to be collected from a sizeable population in a highly economical way (Saunders et al., 2003). A body of quantitative data can be collected by self-completion questionnaires and recently there has been a considerable growth in the number of surveys being administered online (Bryman and Bell, 2003). They can be categorised as either 'e-mail survey', in which questionnaires are sent by e-mail to respondents, or 'web survey', in which respondents are directed to a website in order to complete the survey items (Bryman and Bell, 2003). Case study research is the most common qualitative method used in information systems (Orlikowski and Baroudi, 1991; Alavi and Carlson, 1992). Furthermore, Yin (1994) defines the scope of a case study as: *"A case study is an empirical inquiry that: investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident"*.

4.5 Data Collection Methods

Data collection methods include interviews, focus groups, observations and questionnaires. The present study selects interviews and questionnaires, both of which will now be explained in turn.

4.5.1 Interviews

Interviews are a kind of conversation, a conversation with a purpose. The interview approach is commonly used for social research, possibly in part because the interview appears to be a quite straightforward and non-problematic way of finding things out. To

illustrate, it is *'a situation where one-person talks and another listens: what could be easier; we do it all the time'* (Robson, 1999: 228).

Interviews can be divided into three types: 'structured interviews', using standardised questions, 'semi-structured interviews', which have a list of questions that may vary from interview to interview and 'unstructured interviews' (in-depth interviews), which explore general ideas in detail (Collis and Hussey, 2003; Saunders et al., 2003). In the following sections the three types of interviews are discussed in relation to their usage.

4.5.1.1 Structured Interview

The use of structured interviews is linked with survey research. This is probably the technique most people are familiar with because the approach relies upon the use of a questionnaire as the data collection instrument. According to May (1997: 110), the theory behind this method is that each person is asked the same question in the same way, so that any differences between the answers are held to be real differences and not the result of the interview situation itself. Given this, the role of the interviewer is to direct the respondent according to the sequence of questions on the interview schedule and if clarification is sought, then little or no variability in such elaborations should be apparent.

It is assumed that this method will permit comparability between responses. It relies upon a uniformed structure and a calculated number of people are interviewed, so that they are representative of the population for the purposes of generalisation. Resultant data are then collected and tested for response patterns from the target population through statistical analysis.

4.5.1.2 Semi-Structured Interview

Semi-structured interviews use focused and structured techniques. The questions are normally specified but the interviewer is freer to probe beyond the answers in a manner that would appear prejudicial to the goals of standardisation and comparability. Information about age, sex, occupation, type of household and so on can still be asked in a standardised format. The interviewers who seek clarification and elaboration on answers can then record qualitative information about the topic. This enables the interviewer to probe beyond the basic answers and thus enter into extended dialogue with the interviewee.

May (1997:111) indicated that these types of interviews are said to allow people to answer more on their own terms than the standardised interviews permit; however, they still provide a greater structure for comparability over that of the focused interview. If researchers have a specific focus for their interviews, within a range of other methods employed in their study, the semi-structured interview may be useful. In the current research, in the third phase, 57 semi-structured interviews were held, with the banks' executives, business and IT directors and consultants, to confirm and explain the quantitative results obtained.

4.5.1.3 Unstructured Interview or Focused Interview

The main difference of this type of interview from the structured and semi-structured interview is its open-ended characteristics. This provides the interviewees with an ability to challenge the preconceptions of the researcher and enables them to answer the questions in their own way.

It is sometimes called the 'informal', 'unstandardised' or 'unstructured' interview, May (1997:112) states that this method achieves a different focus for the following reasons: *'First, it provides qualitative depth by allowing interviewees to talk about the subject in terms of their own frames of reference. By this I mean drawing upon ideas and meanings with which they are familiar. This allows the meanings that individuals attribute to evens and relationships to be understood on their own terms. Second, it thereby provides a greater understanding of the subject's point of view'.*

The focused interview clearly involves the researcher's having an aim in mind when conducting the interview but the interviewee is freer to talk about the topic. The current research used an unstructured interview in the first phase. This involved an initial study where one or two interviews were held with the IT directors of each bank in the Saudi banking sector, consisting of the central bank and 11 commercial banks.

4.5.2 Questionnaire

The main data collection method in this current research uses a questionnaire technique. This is one of the most common methods and is often used in business and management research (Saunders et al., 2003). Questionnaires have several advantages: they are extremely efficient at providing large amounts of data, at relatively low costs, in short periods of time (Robson, 2002), with the possibility to be completed at the respondents' convenience, which allows them to consult their files and give a considered view on issues (Sarantakos, 1998), they cover a wide range of data variables (Dillman, 1978), offer a greater assurance of anonymity (Sarantakos, 1998), can encourage frankness when sensitive areas are involved (Robson, 2002), and finally, they are relatively easy

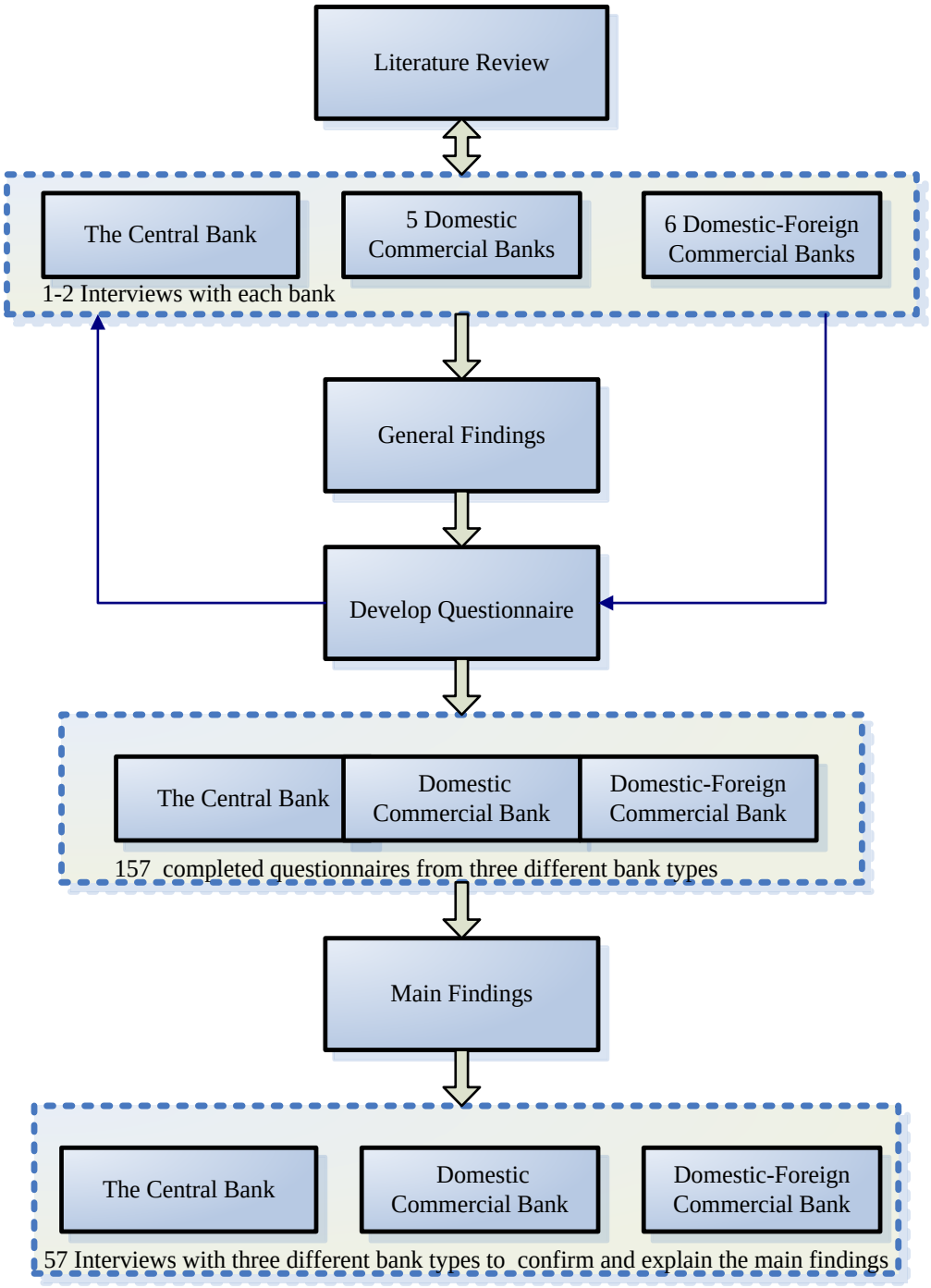
to analyse with quantitative data analysis techniques (Saunders et al., 2003). Consequently, this research will benefit from these advantages; in particular, concerning the amount of data required and the greater assurance of anonymity which is needed in the banking sector.

4.6 Appropriate Approach for the Current Research

Based on the discussions presented in the above sections, the appropriate approach for the current research will now be summarised. The current empirical research is exploratory and uses the positivist approach, it is mainly quantitative, but there will also be some qualitative investigation. Questionnaires and semi-structured and unstructured interviews will be used for data collection. Statistical analyses will be made, using of descriptive analysis, exploratory factor analysis and multiple regression analysis. These data analyses will be discussed in the following sections.

The detailed discussions of the current research methodology, as shown in Figure 4.2, adapted from Jacoby (1995), started with a review of the existing literature on SISP. Communication with the banking sector to explain the idea behind conducting research into SISP in the banking sector was initiated through the sending of a letter from the researcher's supervisor at the university to all the managing directors in the banking sector in Saudi Arabia, including the SAMA top management (see Appendix A), a letter from the SAMA Banking Technology Director to all the IT directors in the Saudi banking sector (see Appendix B) and finally a letter from the researcher to all the managing directors and the IT directors in the banking sector (see Appendix C).

Figure 4.2: Current Research Methodology



The banks were now expectant and ready. In order to answer the research questions, data were collected in three phases. The following sections 2.4.1 to 2.4.12, these phases are discussed.

4.6.1 Phase 1: Unstructured Interviews with IT Directors in the Banking Sector

The first phase involved an initial study where 13 interviews were held with the IT directors of each bank in the Saudi banking sector: two interviews for the two IT directors at the central bank and one interview with each of the IT directors from the 11 commercial banks (see Appendices D and E).

The outcomes from the first phase informed the development of a survey that was used in the second phase, where more information was added about the SISP objectives, SISP internal contextual factors, external consultant functions, SISP external contextual factors, measurements of SISP success, the key stakeholders' roles, and triggers. It also created a respected and trusted relationship between the researcher and the bank employees. The information provided justification to investigate a sample containing a central bank, a domestic commercial bank and a domestic-foreign commercial bank, in order to determine their processes of SISP. The current research did not tap record the interviews as many interviewees were concerned about the confidentiality of their ''strategic'' information, but instead took copious notes during formal and informal observations and added to these notes the researcher's feelings and insights as an observer in the settings.

4.6.2 Phase 2: Research Questionnaire in Three Banks

During the second phase, the researcher used a questionnaire (see Appendix F), which had nine parts, across 12 pages and used a five-point Likert scale. The questionnaire was carefully developed, by triangulating information from multiple resources to ensure data currency and validity. From the three banks, 157 questionnaires from 220 distributed were completed and returned from bank executives, business and IT

directors, and consultants. The response rate was 71% which was high, considering that the questionnaire was 12 pages long and fairly complex to complete.

This high 71 % response rate may be explained by several factors.

- First, the assurances from the researcher and his supervisor that all information about the organisations will be treated as strictly confidential and all publications of results will be anonymous to protect the confidentiality and commercial interest of the institution.
- Second, the respondents found the topic important and the researcher had made great efforts to convince the respondents to participate.
- Third, most banks studied were likely to perceive their participation in the study as further evidence of their success regarding developing and implementing SISP.
- Questionnaires were delivered and picked up by the researcher and followed up by e-mails and phone calls.

The questionnaire was divided into nine parts. The first part focused on SISP objectives in the banking sector, which contained the SISP objectives and their achievement. The second part asked about SISP success based on these objectives. The third part contained questions about the methods followed for supporting IS strategy, the amount of time experienced in SISP and the time taken for developing SISP. The fourth part contained questions about the SISP internal contextual factors. It was adapted from Basu et al. (2002), which studied the impact of organisational commitment, senior management involvement and team involvement on SISP. These factors are examined in this research. The fifth part of the survey contained questions about the external contextual factors that influenced SISP. The sixth part contained questions about the measurement of SISP success and the seventh part contained questions about the roles of the SISP key stakeholders. The eighth part contained the SISP triggers in the banking sector. These items were based on the literature about the variables reviewed in

Chapters 2 and 3. Each indicator was measured using a five-point Likert scale. The final part of the questionnaire, section nine, contained questions about the respondent and the organisational demographics.

To satisfy practitioners, four experienced banking strategic IS planners pilot-tested the questionnaire in the presence of the researcher. One of the planners was a Saudi citizen, while the other three were westerners. The researcher asked these pilot subjects to identify any omissions, errors or inconsistencies in the survey. Additionally, and to satisfy the academics, five professors and four MPhil students from the areas of IT and management studies reviewed it. Two of the professors and one of the MPhil students were Saudis and the others were westerners.

The pilot test resulted in the incorporation of several small revisions to the questionnaire. These included the rewording of a few questions to make them clearer and an adjustment to the scale for the extent to which the SISP practices were applied. In addition, there was an alteration to the instructions on the survey to make it easier to complete.

After the pilot test, the questionnaire was carefully developed by triangulating information from multiple sources to ensure data currency and validity.

The questionnaires were submitted to 220 people who had, in some way, participated in SISP in one of the 3 banks. Participants are IT directors and managers, business user directors and managers, IT consultants, executives and business consultants.

As mentioned before, the response rate is high, considering the length and complexity of the questionnaire and exceeds that of other similar and recent SISP surveys (completed by Basu et al., 2002).

Factor analysis and regression were used to examine the variables and the results are explained in the following two chapters.

4.6.3 Phase 3: Semi-Structured Interviews in Three Banks

In the third phase, 57 interviews were held to confirm and explain the quantitative results obtained in the second phase (see Appendices G and H). 30 participants were from the central bank, 18 from the domestic commercial bank and 9 from domestic-foreign commercial bank.

Therefore an in-depth case study was conducted in the three banks, during phases two and three.

4.7 Reliability and Validity

The use of a preliminary or pilot survey is the first step to securing the reliability and validity of a survey document (Churchill, 1999). This step was discussed previously; however, to briefly summarise, the advantages include revealing possible problems in the design phase, evaluating how well the findings will meet the overall research objectives and identifying the possible range of errors that will be in the current design format. Churchill (1999: 398) noted the necessity for a pilot survey: *"the researcher who avoids a questionnaire pre-test and tabulation of replies is either naïve or a fool … [it is] the most inexpensive insurance … of success … of the research project"*.

The reliability and validity of gathered data remain the main concerns of every researcher. Reliability is defined as the agreement between two efforts to measure the same trait through maximally similar methods. Validity, on the other hand, is defined as the agreement between two attempts to measure the same trait through maximally different methods. In other words, one is concerned with difference whilst the other is concerned with consistency (Oppenheim, 1992). It is possible to have high validity but low reliability. Generally, if the measurement is valid, its reliability is generally assured whereas the reliability of a measurement may not guarantee its validity. Other authors described reliability as *"the extent to which a measurement is free of variable errors"* (Tull and Hawkins, 1980). Such 'variable errors' could include elements such as poor wording, ambiguity and vagueness, differences in interpretation of the questionnaires by several interviewers or questions beyond the scope and knowledge of those interviewed, all of which could adversely affect the reliability of the data gathered by the document. The pilot survey, therefore, helped to avoid the occurrence of such skewing of the data. In the current research, further efforts to enhance the reliability of the data occurred by controlling the interviewers; in this case, all of the interviews were conducted by the researcher alone and only those with access to and knowledge of SISP information were asked to respond and complete the questionnaires. The selection of this sample was discussed in previous sections.

Validity is further defined by Murdick and Cooper (1982: 64) to mean *"the extent to which an instrument measures whatever it was designed to measure"*. In the current research, various methods were appropriated by which to ensure validity. To illustrate, this included the extensive literature review, presented herein and in previous chapters.

In addition, consultation with other MPhil students and the academic staff of the university assisted in ensuring the validity, wording and competence of the questionnaire. The questions were carefully crafted to be clear, direct and unbiased in their presentation. Instructions were short but complete, unambiguous and utilised specifically chosen words, for which multiple meanings did not exist, to facilitate the ease of answering. To pre-test the questionnaire, as previously mentioned, a smaller version of the document was answered by a small group of respondents from similar backgrounds to those who would eventually participate in the study – these were mainly from banks but also included some university students. This pre-test was suggested by the literature review, to determine the inclusiveness and validity/reliability of the questions in the document which relate to the research focus (Saunders et al., 2003).

Respondents were also questioned regarding their ease of understanding and the format, notice being taken of problematic areas. The respondents were timed, to determine how long it took them to complete the questionnaire. The group included non-native English speakers, including some Arabic speakers, to ensure this would be representative of the actual test group as the actual research would occur in Saudi Arabia. There were few problems reported, which were focused around word choices that were imprecise and these were corrected for the final document. As detailed previously, the extensive review, critique and pre-testing produced a high validity document.

Cronbach's alpha was used to determine the reliability of the final questionnaire once it was completed by the actual research participants. Low reliability responses were dropped from the gathered data. Cronbach's alpha is one of the most commonly used reliability coefficients (Sekaran, 1992) which determine how well the questions, from

the survey/questionnaire, are positively correlated. Alpha (α) is assigned a value from zero (no internal consistency) to one (complete internal consistency). With a value approaching one, the internal consistency of the document is affirmed. This current research used SPSS to run the tests, explained in detail in Chapter 5 (section 5.3.3); this statistical package makes what was once a very complicated complex computation accurate and accessible. The range within all dimensions was significantly higher than 0.7, as suggested by Nunnally (1978), thus indicating that our scale was quite reliable.

4.8 The Research Ethics

Ethical issues in the current research include the responsibilities of various parties, the country's and the corporate cultural constraints, the data collection format in the interview and the questionnaire, the confidentiality of data gathered during the analysis and its documentation and, ultimately, the use of the final findings.

Taylor (1975) defined ethics as *"a study of the notions of morality"*. Miesing and Preble (1985, in Remenyi and Williams 1996: 402) extended this definition by stating that ethics is a *"framework for human conduct that relates to moral principles and attempts to distinguish right from wrong"*.

Trochim (2006) explained ethical issues as follows: *"There are many key phrases that describe the system of ethical protections that the contemporary social and medical research establishment have created to try to protect better the rights of their research participants"*. The principle of voluntary participation requires that people are not to be coerced into participating in research. This is especially relevant where researchers have previously relied on 'captive audiences' for their subjects, such as from prisons,

universities and so on. Closely related to the notion of voluntary participation is the requirement of informed consent. Essentially, this means that prospective research participants must be fully informed about the procedures and risks involved in the research and they must give their consent to participate.

Ethical standards also require researchers not to put participants in a situation where they might be at risk of harm as a result of their participation. Harm can be defined as both physical and psychological. In addition, two standards are applied to help protect the privacy of the research participants: most research guarantees confidentiality to participants and they are assured that identifying information will not be made available to anyone who is not directly involved in the study. The stricter standard involves the principle of anonymity which essentially means that the participant will remain anonymous throughout the study, even to the researchers themselves. Clearly, the anonymity standard is a stronger guarantee of privacy but is sometimes difficult to accomplish, especially in situations where participants are measured at multiple time points (e.g. pre/post studies). Increasingly, researchers have had to deal with the ethical issue of a person's right to service. Good research practice often requires the use of a no-treatment 'control group', a group of participants who do not get the treatment or programme that is being studied. But when that treatment or programme may have beneficial effects, persons assigned to the no-treatment, control group may feel their rights to equal access to services are being curtailed. Consequently, these many ethical issues were considered when planning and conducting this research.

4.9 Summary

This empirical research is exploratory and uses the positivist approach. As previously mentioned it is mainly quantitative but will also undertake qualitative investigation. Questionnaires and interviews will be utilised for data collection and statistical analyses will be performed on the quantitative data (descriptive analysis, exploratory factor analysis and multiple regression analysis), then the qualitative data will be analysed.

CHAPTER 5
Quantitative Data Analysis

5.1 Introduction

The previous chapter explains the processes involved in: conducting the initial interviews; developing the questionnaire and conducting the final interviews; and in implementing the data collection. This chapter will concentrate on presenting and discussing a range of statistical analyses which were generated as the basis for understanding the characteristics and experiences of IS planning in the responding banks. Therefore the chapter aim to answer the main proposed research question, as previously discussed: 'How can the process of Strategic Information Systems Planning (SISP) be improved to achieve success in the banking sector?' To do so, the following eight sub-questions (RQ) need to be answered:

RQ1: What are the SISP objectives in the banking sector?

RQ2: What are the main elements of SISP objectives in the banking sector which, when achieved, influence the success of SISP?

RQ3: What are the main elements, the internal factors of SISP which affect the success of SISP in the banking sector?

RQ4: What are the main functions of the external consultant's impact on the success of SISP in the banking sector?

RQ5: What are the main elements of SISP in terms of the external contextual factors, which influence its success in the banking sector?

RQ6: Which internal and external measurements of SISP impact on its success when utilised in the banking sector?

RQ7: Which key stakeholder roles (initiating, leading, involving, time spending and exerting power) impact on the success of SISP in the banking sector?

RQ8: Which SISP triggers impact on the success of SISP in the banking sector?

This chapter is organised into thirteen further sections. Firstly, the demographics *(Descriptive Analysis)* are discussed. Secondly, data preparation and purification of measures are examined (*Reliability Analysis*). Thirdly, SISP objectives in the banking sector are explored (*Factor Analysis*). Fourthly, regression analysis will be discussed in section 5.5. The relationships between the elements of the research sub-questions and SISP success will be examined as follows. In section 5.6, the achievement of objectives and SISP successes will be investigated; section 5.7 will focus on the internal contextual factors in the banking sector; the external consultant's functions will be reviewed in section 5.8; then, in section 5.9, SISP external contextual factors in the banking sector will be evaluated. The remaining sections will then focus on the external and internal measures of SISP success, the key stakeholders' influences in the banking sector and the SISP triggers in the banking sector. Finally, the thirteenth section summarises the chapter.

5.2 Demographics *(Descriptive Analysis)*

The demographics section focuses on providing common information about the participating banks and respondents and contains two sections. The first, section 5.2.1, provides a profile of the banking sector; whereas, the second, section 5.2.2, presents a profile of the responding participants.

5.2.1 Profile of Banking Sector (Results from Phase 1 Data Collection)

In addition to the literature on the banking sector, detailed in Chapter 3, this section focuses on providing valuable information about the banking sector which was gathered during the first phase of data collection in Chapter 4 (Section 4.6.1). The aim is to provide a brief account of the profile of the banking sector; this profile supported the decisions to choose the sample for this study.

Frequency analysis and cross-tabulation were used to distribute the banking sector according to the following characteristics: bank types, total number of bank employees, total number of IT employees and annual IT budget.

5.2.1.1 Bank Types

The banking sector consists, as shown in Table 5.1, of one central bank (8.30%), five domestic commercial banks (41.70%) and six domestic-foreign commercial banks (50.00%).

Table 5.1: Bank Types

Bank Type	Frequency	Percentage
Central Bank	1	8.30 %
Domestic Commercial Banks	5	41.70 %
Domestic-Foreign Commercial Banks	6	50.00 %
Total	**12**	**100.00 %**

Unlike the UK but similar to the USA, Saudi Arabia has only one central bank. In addition, the number of domestic-foreign commercial banks is greater than that of domestic-commercial banks.

5.2.1.2 Total Number of Bank Employees

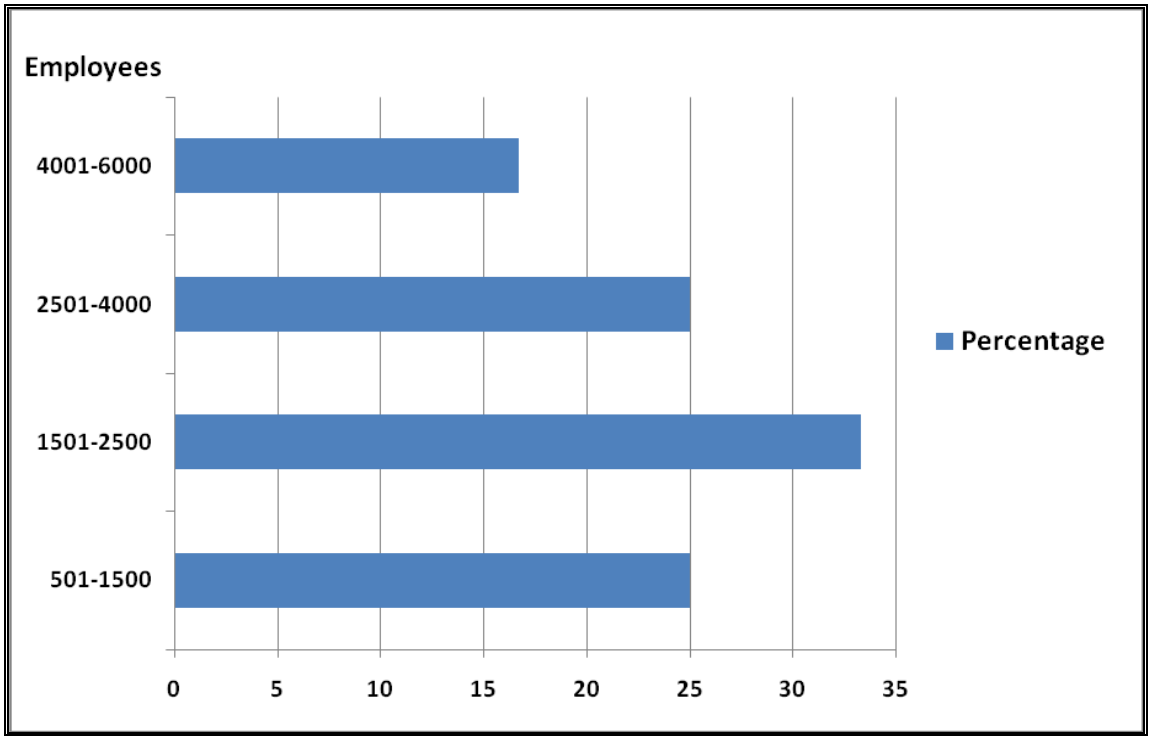
The total number of employees can be used as a measure of company size, this is consistent with previous empirical work on IS (Guimaraes and Gupta, 1988; Raymond, 1990; Suhaimi, 1998). Table 5.2 presents the participating banks based on their total number of employees and Figure 5.1 shows a bar-chart for the breakdown.

Table 5.2: Total Number of Bank Employees

Bank Employees	Frequency	Percentage
501 to1500	3	25.00%
1501 to 2500	4	33.30%
2501 to 4000	3	25.00%
4001 to 6000	2	16.70%
Total	**12**	**100.00%**

Table 5.2 shows that the majority of the participating banks, 33.30%, have a total number of between 1501 and 2500 employees.

Figure 5.1: Total Number of Bank Employees



The next two largest groups represent 25% each, with between 501 and 1500 employees, and between 2501 and 4000 employees. The smallest group, 16.70% has between 4001 and 6000 employees.

To explore the relationship between the bank type and bank size, these two variables were cross-tabulated; the results for this are shown in Table 5.3.

Table 5.3: Bank Type Total Number of Employees

Bank Type	**Total Number of Employees**				**Row**
	501 to 1500	1501 to 2500	2501 to 4000	4001 to 6000	
Central Bank	0	0	1	0	**1**
Domestic Commercial Banks	1	0	2	2	**5**
Domestic-Foreign Commercial Banks	2	4	0	0	**6**
Total	**3**	**4**	**3**	**2**	**12**

It appears that all of the domestic-foreign commercial banks are smaller in size and have fewer than 2501 employees (see Table 5.3); in contrast, 80% of the domestic commercial banks have more than 2501 employees. These findings justify the need to work with a sample containing a central bank, a domestic commercial bank and a domestic-foreign commercial bank, in order to best determine the process of SISP in banks of different types and size and in order to achieve the research objectives.

5.2.1.3 Total Number of Bank IT Employees

As Table 5.4 shows, the majority of the participating banks have a total of between 301 and 500 IT employees, representing 33.30%. The next two groups represent 25% each, and have either fewer than 100, or between 101 and 200 IT employees, respectively.

The minority of the participating banks have a total of between 201 and 300 IT employees which represents 16.70%.

Table 5.4: Total Number of Bank IT Employees

Total Number of Bank IT Employees	Frequency	Percentage
< 100	3	25.00 %
101 to 200	3	25.00 %
201 to 300	2	16.70 %
301 to 500	4	33.30 %
Total	**12**	**100.00 %**

Comparing the total number of IT employees in Tables 5.4 with the total number of bank employees in Table 5.2, the ratio is roughly 1:12. In order to explore the relationship between the bank type and the total number of IT employees these two variables were then cross-tabulated; the results are shown in Table 5.5.

Table 5.5: Total IT Employees vs. Bank Type (Cross-Tabulation)

Bank Type	IT Employees				Total
	< 100	**101 to 200**	**201 to 300**	**301 to 500**	
Central Bank	0	0	0	1	**1**
Domestic Commercial Bank	1	0	1	3	**5**
Domestic-Foreign Commercial Bank	2	3	1	0	**6**
Total	**3**	**3**	**2**	**4**	**12**

The results from Table 5.5 indicated that five out of six domestic-foreign commercial banks are smaller in terms of their IT numbers, with fewer than 201 employees. In contrast, 80% of the domestic commercial banks had more IT employees. This finding

supports the findings in section 5.2.1(b) which indicated that it was justifiable to proceed with a sample containing a central bank, a domestic commercial bank and a domestic-foreign commercial bank, in order to best determine the process of SISP in banks of different types and size and to fully explore the research objectives.

5.2.1.4 Annual IT Budget

As shown in Table 5.6, the majority of the participating banks invested between SR 75 million and SR 150 million annually into their IT, representing 33.30%. The next biggest group, representing 25% of the participating banks, invested between SR 20 million and SR 40 million annually. These were followed by two groups of banks which invested annually between SR 20 million and SR 40 million, and between SR 150 million and SR 300 million, each representing 16.70% respectively. The smallest group invested between SR 600 million and SR 1,200 million annually, representing 16.70%.

Table 5.6: Annual IT Budget

Annual IT Budget SR (000,000) ($ US = 3.75 SR)	**Frequency**	**Percentage**
20 to 40	3	25.00%
40 to 75	2	16.70%
75 to 150	4	33.30%
150 to 300	2	16.70%
600 to 1,200	1	08.30%
Total	**12**	**100.00%**

To identify whether there was a relationship between the bank type and the annual IT budget, these two variables were cross-tabulated, as shown in Table 5.7.

Table 5.7: Annual IT Budget vs. Bank Type (Cross-Tabulation)

Bank Type	Annual IT Budget: SR 000,000					Total
	20 to 40	40 to 75	75 to 150	150 to 300	600 to 1,200	
Central Bank	0	0	1	0	0	**1**
Domestic Commercial Bank	1	0	1	2	1	**5**
Domestic-Foreign Commercial Bank	2	2	2	0	0	**6**
Total	**3**	**2**	**4**	**2**	**1**	**12**

From the table, it appears that four out of six domestic-foreign commercial banks invested less than SR 75 million annually into their IT budget. In contrast, 60% of the domestic commercial banks annually invested more than SR 150 million. The investment in IT for the central bank was between the two groups; this supports the findings of sections 5.2.1.2 and 5.2.1.3 which justifies the need to proceed with a sample which contains the three types of bank to determine the process of SISP in banks of different types and size and in order to fully explore the research objectives. Domestic commercial banks are larger, as shown in section 5.2.1.2, and they tend to invest largely in technology. This finding supports the findings of Bansal (2002) who focused on banks in the USA and suggested that larger banks could spend more than medium-sized institutions on IT. This could be as a result of the larger numbers of business lines, products and services that need to be supported by large global banks, and also to the extent of their large branch networks.

From the banking sector literature review, detailed in Chapter 3, and the findings highlighted in sections 5.2.1.1 to 5.2.1.4 in this chapter, a central bank, a domestic commercial bank and a domestic-foreign commercial bank pose the best combination for investigating the process of SISP in the banking sector and for exploring the research objectives.

5.2.2 Profile of Responding Participants (Results from Phase 2 Data Collection)

As noted in Chapter 4 (Section 4.6.2) the second phase of data collection, there were 220 potential respondents from the three banks; however, only 157 participants returned completed questionnaires. These participants were involved in some way with the SISP process in their banks. This section aims to provide a brief account of the profiles of the participants; this will then help to provide an understanding of: the nature of the organisation; the organisation's direction; the people and their roles in the organisation; and will further provide an understanding of the IT and what IT is available.

Frequency analysis and cross-tabulation were used to distribute the participants according to the following characteristics: job title, superior's job title, bank type, experience in the bank, experience in IT, education, bank activities, payment systems, developing and implementing IS strategy for the first time, time taken for development of SISP in the bank, methods supporting IS strategy, and methods supporting the business strategy.

5.2.2.1 Job Title

As shown in Table 5.8, the majority of participants were classified against their job title as IT directors and managers (89), representing 56.70%. The next biggest group, representing 29.30%, were business user directors and managers (46). The following group of IT consultants (9) represented 5.70% and the executives (8) group represented 5.10 %. The smallest group was business consultants (5) which represented 3.20%.

Table 5.8: Job Title of Participants

Job Title	Frequency	Percentage
Executive	8	5.10%
IT Director/Managers	89	56.70%
Business User Director/Managers	46	29.30%
IT Consultant	9	5.70%
Business Consultant	5	3.20%
Total	**157**	**100.00%**

It has been suggested that senior IS managers can provide a broader organisational perspective of IS activities than individual departmental heads who may have more parochial views (Premkumar and King, 1992). Furthermore, several pioneers in SISP followed this same suggestion, including Lederer and Sethi (1996) and Grover and Lederer (2004). However, this researcher has involved executives, business user directors and managers, and consultants to examine their impact on SISP.

5.2.2.2 Superior's Job Title

Table 5.9 shows that 64 of the participants reported directly to the IT directors and managers; this represents 40.80% as the majority. The next biggest group represents 38.80% reporting to executives and consisted of 61 participants. The smallest group involved 32 participants who reported to the business user directors and managers, representing 3.20 %.

Table 5.9: Job Title of Participant's Superiors

Superior's Job Title	Frequency	Percentage
Executives	61	38.80%
IT Directors/Managers	64	40.80%
Business User Directors/Managers	32	20.40%
Total	**157**	**100.00%**

5.2.2.3 Participants by Bank Type

The greatest numbers of participants (71) were from the central bank; this represents 45.20%, as shown in Table 5.10. This number was expected because the central bank, as mentioned in Chapter 3, initiated an IS strategy for the majority of its payment systems across the country.

Table 5.10: Participants by Bank Type

Distribution of Participants by Bank Type	Frequency	Percentage
Central Bank	71	45.20%
Domestic- Commercial Bank	49	31.20%
Domestic-Foreign Commercial Bank	37	23.60%
Total	**157**	**100.00%**

The next largest group, representing 31.20%, was from the domestic commercial banks, with 49 participants. The domestic-foreign commercial banks followed with 37 participants, which represented 23.60%.

5.2.2.4 Experience in Banks

Table 5.11 shows that 36 participants from the sample had working experience with their banks of between 5 and 10 years, representing 22.90%. The next biggest group represents 22.30% of the sample, with 35 participants having had experience of between 15 and 20 years. The following group had 29 participants who had experience of between 20 and 25 years, representing 18.50%. There were two groups with 26 participants in each: one had experience of less than 5 years; whereas, the other had experiences of between 10 and 15 years, representing 16.60% each. The second smallest group had only 4 participants who had between 25 and 30 years' experience,

representing 2.50%. The smallest group had only 1 participant who had more than 30 years' experience with the bank, representing 00.60%.

Table 5.11: Participants' Bank Experience (a)

Experience in Bank	Frequency	Percentage
< 5 Years	26	16.60%
5 to 10 Years	36	22.90%
10 to 15 Years	26	16.60%
15 to 20 Years	35	22.30%
20 to 25 Years	29	18.50%
25 to 30 Years	4	2.50%
> 30 Years	1	0.60%
Total	**157**	**100.00%**

The above responses were then regrouped into two categories, as shown in Table 5.12 below. The participants had either less than 10 years' experience, or more. It was identified that those who participated in SISP were highly experienced; the majority, representing 60.50%, had more than 10 years' experience in the bank while only 39.50% had less than 10 years.

Table 5.12: Participants' Bank Experience (b)

Experience in Bank	Frequency	Percentage
< 10 Years	62	39.50%
> 10 Years	95	60.50%
Total	**157**	**100.00%**

This finding supports Basu et al. (2002) and their study's findings which indicated that 105 IS planners in the USA who participated in SISP were highly experienced within their organisations.

5.2.2.5 IT Experience

As shown in Table 5.13, 37 participants from the sample had work experiences in IT of between 15 and 20 years, representing 23.60%. The next biggest group represents 19.10% of the sample and had 30 participants with less than 5 years' experience. There were two groups, each with 27 participants: one had experience of between 5 and 10 years, whereas the other had between 20 and 25 years, representing 17.80% each. These were followed by a group of 19 participants who had experience of between 10 and 15 years, representing 12.10%. The next group had 10 participants with more than 30 years' experience in IT, representing 6.40%. The smallest group, with 5 participants, had IT experience of between 25 and 30 years, representing 3.20%.

Table 5.13: Participants' IT Experience (a)

Experience in IT	Frequency	Percentage
< 5 Years	30	19.10%
5 to 10 Years	28	17.80%
10 to 15 Years	19	12.10%
15 to 20 Years	37	23.60%
20 to 25 Years	28	17.80%
25 to 30 Years	5	3.20%
> 30 Years	10	6.40%
Total	**157**	**100.00%**

By regrouping the responses into two categories, as shown in Table 5.14, participants had either less than 10 or more than 10 years' IT experience. The majority of the participants, representing 63.10%, had more than 10 years' experience in IT, while only 36.90% had less.

Table 5.14: Participants' IT Experience (b)

Experience in IT	Frequency	Percentage
< 10 Years	58	36.90%
> 10 Years	99	63.10%
Total	**157**	**100.00%**

These findings show that the SISP participants were highly experienced in IT. Again, these finding support the Basu et al. (2002) findings which indicated that those who participated in the SISP process were also highly experienced in IT.

5.2.2.6 Education

Table 5.15 shows that the majority of the participants (58) had postgraduate degrees, representing 36.90%. The next biggest group, 33.10% of the sample, had 52 participants who were 4-5 year college graduates. The next largest group had 34 participants who had some postgraduate education, representing 21.70%. The second smallest group had 10 participants who were 2-year college graduates, representing 6.40%, and the smallest group had 3 participants with high school diplomas, representing 1.90%.

Table 5.15: Participants' Level of Education

Education	Frequency	Percentage
High School Diploma	3	1.90%
2-Year College Graduate	10	6.40%
4-5 Year College Graduate	52	33.10%
Some Postgraduate	34	21.70%
Postgraduate Degree	58	36.90 %
Total	**157**	**100.00%**

In general, the subjects are highly educated and more than 90% of the participants are at least 4-5 year college graduates. The NCB executive provides clarification, stating

''*Banking industry needs highly educated people and strategic information systems planning needs the highest''.*

5.2.2.7 Bank Activities

Table 5.16 shows the greater part of the sample, 113 participants, deal with commercial bank activities, representing 72%. The minority of the sample, 44 or 28%, deals with central bank activities.

Table 5.16: Participants' Bank Activities

Bank Activities	Frequency	Percentage
Central Bank Activities	44	28%
Commercial Bank Activities	113	72%
Total	**157**	**100%**

The central bank activities represent 28% of the total, while the participants from the central bank, detailed in Table 5.10, represent 45.20%, which means that the central bank is engaging in some of the commercial bank activities described in Chapter 3.

5.2.2.8 Payment Systems

The common payment systems which were the result of SISP in the banking sector, explained in more detail in Chapter 3, were represented through the participants in this study. As shown in Table 5.17, eight systems were represented as follows: 37 participants with work directly related to MIS (23.60%), and 36 of the participants had work related to commercial banking applications **(**22.90%).

Table 5.17: Participants' Payment Systems

Payment Systems	Frequency	Percentage
Commercial Banking Applications	36	22.90%
SADAD	11	7.00%
Telephone Banking	6	3.80%
Internet Banking	7	4.50%
SPAN	17	10.80%
Tadawul	10	6.40%
SARIE	33	21.00%
MIS	37	23.60%
Total	**157**	**100.00%**

The remaining participants worked in different areas, as follows: 33 participants' work was related to SARIE, this represented 21%; 17 participants were directly related to SPAN in their work, representing 10.80%; 11 participants' work related to SADAD and represented 7%; 10 participants, directly related to Tadawul in their work, represented 6.40%; 7 participants had direct relationships with Internet banking in their work, representing 4.50%; and, finally, 6 participants' work was directly related to telephone banking and represented 3.80%.

5.2.2.9 Developing and Implementing IS Strategy for First Time

As shown in Table 5.18, the majority of the participants (93) developed and implemented IS strategy for the first time after the Y2K, representing 59.20% of the sample, while 64 did so before the Y2K, representing 40.80%.

Table 5.18: Developing and Implementing IS Strategy for the First Time

Developing and Implementing IS Strategy for First Time.	Frequency	Percentage
Before Y2K	64	40.80%
After Y2K	93	59.20%
Total	**157**	**100.00%**

The problems associated with the year 2000 were the subject of the book by Murray and Murray (1984), *Computers in Crisis*; this book was republished in 1996 as *The Year 2000 Computing Crisis*. The problem, also known as the Y2K problem, the millennium bug and the Y2K Bug, was the result of a practice in early computer programming design which caused some date-related processing to operate incorrectly for dates and times on and after 1 January, 2000.

Throughout the country, the Saudi banking sector played an important role in solving this problem; consultants and IT professionals strongly recommended developing and implementing SISP to assist in any future computing crises.

5.2.2.10 Time Taken for Bank SISP Development

Table 5.19 presents the time taken for developing SISP in the bank and the pie-chart in Figure 5.2 depicts a breakdown. The biggest group of participants (60) took more than 12 months to develop SISP in their banks, this represents 38.20%.

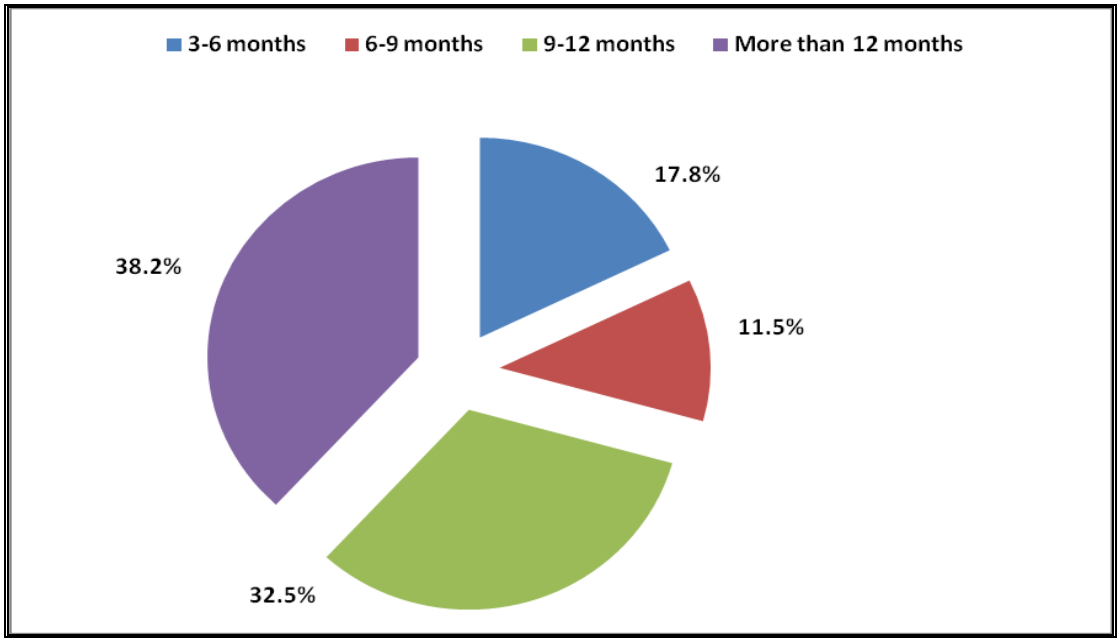
The next biggest group represents 32.50% of the sample, 51 participants who took between 9 and 12 months to develop SISP.

Table 5.19: Time Taken for Bank SISP Development

Time Taken for Development of SISP in Bank	Frequency	Percentage
3-6 months	28	17.80%
6-9 months	18	11.50%
9-12 months	51	32.50%
More than 12 months	60	38.20%
Total	**157**	**100.00%**

The next group, with 28 participants, took between 3 and 6 months, representing 17.80%, and the smallest group, with 18 participants, 11.50 %, took a development time of between 6 and 9 months.

Figure 5.2: Time Taken for Bank SISP Development



5.2.2.11 Methods Supporting Bank IS Strategy

In Chapter 2, several methods for developing SISP were discussed. Table 5.20 shows the greatest part of the sample, 145 participants, developed their strategies for their banks using in-house methods and represented 92.40% of the sample. The second group of 8 participants (5.10%) used an informal IS strategy for SISP development. The minority of the sample (2.50%) used the vendor's methods for SISP development in their banks; however, this represented only 4 participants.

Table 5.20: Methods Supporting Bank IS Strategy

Methods Supporting IS Strategy	Frequency	Percentage
Vendor's Methods	4	2.50%
In-House IS Strategy (Written and Documented)	145	92.40%
Informal IS Strategy (In People's Heads)	8	5.10%
Total	**157**	**100.00%**

5.2.2.12 Methods Supporting Bank Business Strategy

The importance of the business strategy to the IS strategy was discussed in Chapter 2; this should be available and can be formal or informal. Table 5.21 shows the greater part of the sample, 101 participants developed, formal business strategies for their banks, representing 64.40%. The smaller group (35.70%) used informal business strategies and represented 56 participants.

Table 5.21: Methods Supporting Bank Business Strategy

Methods Supporting Bank Business Strategy	Frequency	Percentage
Formal Business Strategy (Written and Documented)	101	64.30%
Informal Business Strategy (In People's Heads)	56	35.70%
Total	**157**	**100.00%**

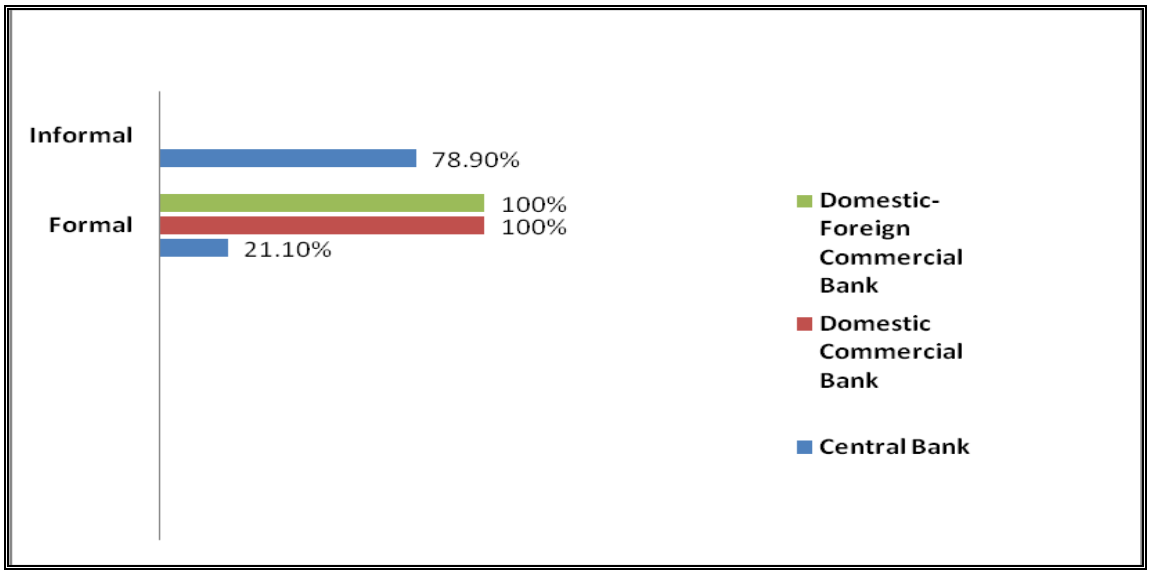
In order to explore the relationship between the bank type and the method for supporting business strategy, cross-tabulation of the participants was performed on these two variables. The results are displayed in Table 5.22 and Figure 5.3 shows a bar-chart for the breakdown of these results.

Table 5.22: Methods Supporting Bank Business Strategy (Cross-Tabulation)

Bank Type		Method for Supporting Business Strategy		Total
		Formal	Informal	
Central Bank	Count	15	56	71
	% within bank type	21.1%	78.9%	100.0%
Domestic Commercial Bank	Count	50	0	50
	% within bank type	100.0%	.0%	100.0%
Domestic-Foreign Commercial Bank	Count	36	0	36
	% within bank type	100.0%	.0%	100.0%
Total	**Count**	**101**	**56**	**157**
	% within bank type	**64.3%**	**35.7%**	**100.0%**

The results from Table 5.22 indicate that the domestic commercial bank and the domestic-foreign commercial bank have **only** formal business strategies that are written and documented. In contrast, 56 participants (78.90%) from the 71 of the central bank have informal business strategies, which are theoretical and only in people's heads.

Figure 5.3: Methods Supporting Bank Business Strategy (Cross-Tabulation)



These findings indicate that informal strategies could be used, but the question is how. This will be discussed later in the analysis of the qualitative data.

5.3 Data Preparation and Purification of Measures *(Reliability Analysis)*

After the stage of collecting the data from phase 2 as explained in Chapter 4 (Section 4.6.2), researchers must undertake several steps to obtain meaningful results in the analysis stage (Nachmias and Nachmias, 1996). The following sections will consider these steps in detail.

5.3.1 Data Preparation

The first step was to prepare the data for analysis and involved the processes of data editing, coding and data entry into a statistical package as follows. Firstly, raw data were edited to detect any errors and omissions, which were corrected where possible, and then they were certified to ensure that the minimum data quality standards were achieved. Secondly, the study's variables were coded into formats for the Statistical Package for the Social Sciences (SPSS), version 14.0, which is used in data analysis. Each variable was then given a unique label. Finally, the data were entered into SPSS. Each of the completed questionnaires was first checked for errors and omissions, the answers were then manually entered into the computer and the data were then ready for analysis.

5.3.2 Purification of Measures

Once the entry and recording processes were completed, all of the measures were then purified to assess their reliability and validity. There are several reasons for emphasising the validity and reliability of measurements (Churchill, 1979). First, a reliable and valid measuring instrument enhances the methodological thoroughness of the research. Second, it permits a co-operative research effort and provides support for the

triangulation of results. Third, it provides a more meaningful explanation of the phenomena being investigated.

In the present study, the validity and reliability measurement was completed using two types of diagnostic measures. The first was the item-to-total correlation; the aim was to remove items that had low correlations, unless they represented an additional domain of interest. This method is the most common procedure used by researchers because it is considered to guarantee the reliability of a multi-item scale (Churchill, 1979). The purpose of the item-to-total correlation measure is to determine the relationship of a particular item to the rest of the items in that dimension. The process helps to ensure that the items that make up the dimension share a common core (Churchill, 1979). In this purification process, the items should have item-to-total correlation scores of 0.30 and above to be retained for further analysis because these results are considered to have high reliability (Edgett, 1991; Eid, 2003).

The second type was a reliability coefficient which assesses the constituency of the entire scale; *Cronbach's Alpha* is the most widely used measure (Nunnally, 1979; Peter, 1979; Hair et al., 2006). The generally agreed lower limit for Cronbach's Alpha is 0.70, although in exploratory research it may decrease to as low as 0.60 (Robinson et al., 1991). Therefore, due to the nature of the present study, 0.60 was used because the research is exploratory and aims to investigate SISP in banking sector in Saudi Arabia.

5.3.3 Reliability Analysis Results

The following sections, outlined below, will precede the discussion section and will focus on the process of computing reliability. This reliability analysis has been conducted for all the measuring instruments in the questionnaire related to SISP in the banking sector, namely: SISP objectives; SISP objectives achievements; SISP internal

factors; SISP external consultant functions; SISP external factors; external and internal measures of SISP success; SISP key stakeholders' influences; and SISP triggers.

5.3.3.1 Reliability Analysis Results for SISP Objectives in Banking Sector

The results of the reliability analysis for SISP objectives in the banking sector, questionnaire question 1 (QQ1), are shown below in Table 5.23.

All items were found to have high item-to-total correlations which were above the acceptable level of 0.30 and reliability coefficients that were significantly higher than the acceptable level of 0.60, Cronbach's Alpha was 0.878. These results confirm that the scales used are reliable and acceptable for further analysis.

Table 5.23: Reliability Statistics for SISP Objectives

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ1	Objectives for strategic information systems planning (SISP) in banking sector.		**.878**
Obj1	Identify strategic applications which are helping bank to achieve its goals.	.497	
Obj2	Align IS with business needs.	.520	
Obj3	Adopt or match goals of IS to change goals of bank.	.390	
Obj4	Understand strategic priorities of top management.	.455	
Obj5	Gain competitive advantage from IS (e.g. more market share).	.345	
Obj6	Increase visibility of IS in organisation.	.491	
Obj7	Improve communication about IS with users.	.449	
Obj8	Increase top management commitment to IS.	.659	
Obj9	Generate new ideas to reengineer business processes through IS.	.572	
Obj10	Envisage future opportunities and prepare for future.	.589	
Obj11	Identify IS applications.	.539	
Obj12	Identify new and higher payback applications.	.551	
Obj13	Forecast IS resource requirements	.666	
Obj14	Allocate IS resources.	.648	
Obj15	Facilitate management and control of IS resources.	.540	
Obj16	Define new business strategies or modify existing ones.	.521	
Obj17	Develop technology policies and architecture.	.366	

5.3.3.2 Reliability Analysis Results for SISP Objectives' Achievements in Banking Sector

Table 5.24 shows the results of the reliability analysis for SISP objectives achievements in the banking sector, questionnaire question 2 (QQ2). Here, all items were also found to have high item-to-total correlations, which were above the acceptable level of 0.30, and reliability coefficients, Cronbach's Alpha of 0.909, significantly higher than the acceptable level of 0.60. These results again confirm that the scales used were reliable and acceptable for further analysis.

Table 5.24: Reliability Statistics for SISP Objectives Achievements

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ2	Objectives for strategic information systems planning (SISP) in the banking sector.		**.909**
Objach1	Identify strategic applications which are helping bank to achieve its goals.	.661	
Objach2	Align IS with business needs.	.582	
Objach3	Adopt or match goals of IS to change goals of bank.	.440	
Objach4	Understand strategic priorities of top management.	.616	
Objach5	Gain competitive advantage from IS (e.g. more market share).	.401	
Objach6	Increase visibility of IS in organisation.	.590	
Objach7	Improve communication about IS with users.	.546	
Objach8	Increase top management commitment to IS.	.610	
Objach9	Generate new ideas to reengineer business processes through IS.	.605	
Objach10	Envisage future opportunities and prepare for future.	.670	
Objach11	Identify IS applications.	.757	
Objach12	Identify new and higher payback applications.	.650	
Objach13	Forecast IS resource requirements.	.526	
Objach14	Allocate IS resources.	.678	
Objach15	Facilitate management and control of IS resources.	.498	
Objach16	Define new business strategies or modify existing ones.	.619	
Objach17	Develop technology policies and architecture.	.519	

Even though the above two tables contain the same items, they each have different functions and therefore different results. Table 5.23 examines the applicability of the objectives for the banking sector, while Table 5.24 tests the achievement of these objectives. These results will be discussed in more detail in a later section.

5.3.3.3 Reliability Analysis Results for SISP Internal Factors

In the present study, the major SISP internal factors to be examined in the banking sector are the availability of business strategy, the alignment of IS strategy with the business strategy, the management commitment and management support.

The availability of the business strategy results, from the reliability analysis, questionnaire question 6 (QQ6), are shown in Table 5.25.

Table 5.25: Reliability Statistics for Availability of the Business Strategy (a)

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ6	Availability of business strategy in the banking sector.		**.642**
BSAvl1	Professional banking staff know the business of bank.	.473	
BSAvl2	Professional banking staff are aware of bank's partners.	.548	
BSAvl3	Professional banking staff are aware of bank's competitors.	.472	
BSAvl4	Bank's procedures and work-flow are clear.	**.268**	

One problematic item, BSAvl4, was identified as not exhibiting sufficient item-total correlation (≥0.30). Therefore the item was removed and a further reliability analysis was made; the new results are presented in Table 5.26. As Table 5.26 shows, all items had a high item-to-total correlation, and Cronbach's Alpha was significantly higher than acceptable. These results confirm that the scales used are reliable.

Table 5.26: Reliability Statistics for Availability of the Business Strategy (b)

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ6	Availability of business strategy in the banking sector.		**.673**
BSAvl1	Professional banking staff know the business of bank.	.458	
BSAvl2	Professional banking staff are aware of bank's partners.	.606	
BSAvl3	Professional banking staff are aware of bank's competitors.	.468	

The results of the reliability analysis for the alignment of the IS strategy with the business strategy, questionnaire question 7 (QQ7), are shown below in Table 5.27.

Table 5.27: Reliability Statistics for Alignment of IS Strategy with Business Strategy

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ7	Alignment of information strategy with business strategy in banking sector.		**.913**
ISBAln1	IS staff are able to keep up with IT advancements.	.581	
ISBAln2	Business goals and objectives are made known to IS management.	.634	
ISBAln3	IS department is responsive to user needs.	.813	
ISBAln4	IS management is knowledgeable about business.	.653	
ISBAln5	Top management has confidence in the IS department.	.741	
ISBAln6	IS department provides efficient services.	.740	
ISBAln7	IS department provides reliable services.	.753	
ISBAln8	There is frequent communication between users and IS department.	.577	
ISBAln9	Business and IS management work together in prioritising applications development.	.577	
ISBAln10	Top management is knowledgeable about IS.	.739	
ISBAln11	Corporate business plan is made available to IS management.	.520	
ISBAln12	Users participate actively in IS planning.	.591	

All twelve items were found to have very high item-to-total correlations which were above the acceptable level of 0.30; they also had Cronbach's Alpha of 0.913 which was

significantly higher than the acceptable level of 0.60. These results again confirm that the scales used are reliable and acceptable for further analysis.

The reliability statistics for SISP team members, questionnaire question 10 (QQ10), Table 5.28; confirm that the scales used are reliable and acceptable for further analysis.

Table 5.28: Reliability Statistics for SISP Team Members

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ10	Team members of strategic information systems planning in the banking sector.	.	**.827**
Team1	Team members with high credibility were chosen.	.638	
Team2	Team members were chosen on the basis of competency.	.670	
Team3	Teams were drawn from the organisational levels responsible for implementing the plan.	.335	
Team4	Planning team was informed about business changes taking place during the strategic planning for information systems.	.676	
Team5	IT personnel were trained on organisational objectives and key issues.	.684	
Team6	Team members were briefed about the scope and goals of the project, the organisation's mission and purpose, and its internal and external environments.	.665	

Table 5.29 shows the reliability statistics for the top management's commitment to SISP in the banking sector, questionnaire question 11 (QQ11), which again confirms that the scales used are reliable and acceptable for further analysis.

Table 5.29: Reliability Statistics for Top Management Commitment to SISP

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ11	Top management commitment to SISP in the banking sector.		**.884**
Commit 1	Top executive championed SISP process.	.550	
Commit 2	Senior management provided feedback and guidance throughout the process.	.832	
Commit 3	Senior management were briefed throughout the project to ensure their commitment.	.793	
Commit 4	Executives were briefed on the process's scope, objectives, and approaches to obtain their commitment.	.819	
Commit 5	Senior management's key planning issues were determined at the beginning.	.664	

The results from the reliability analysis of the top management support, questionnaire question 12 (QQ12), are shown in Table 5.30.

Table 5.30: Reliability Statistics for Top Management Support for SISP

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ12	Top management support for SISP in the banking sector.		**.856**
Support1	Allocation of sufficient resources.	.798	
Support2	Organisational support.	.589	
Support3	Reasonable expectations from management.	.644	
Support4	High credibility of leaders and sponsors.	.682	
Support5	Low turnover of key people throughout the project.	.548	
Support6	Close management control to resolve conflict among different organisational subunits.	.673	
Support7	IS budget allocation is sufficient.	.460	
Support8	Top management believe IS play important roles in bank's ability to compete.	.442	

All eight of the items were found to have very high item-to-total correlations which were above the acceptable level of 0.30; they also had Cronbach's Alpha of 0.856 which is significantly higher than the acceptable level of 0.60.

5.3.3.4 Reliability Analysis Results for SISP External Consultant Functions in Banking Sector

Table 5.31 shows the results from the reliability analysis of the external consultant functions, questionnaire question 9 (QQ9).

Table 5.31: Reliability Statistics for External Consultant Functions

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ9	Roles of external consultant in SISP in the banking sector.	.	**.986**
ConsRo1	External consultant explained importance of the study.	.952	
ConsRo2	External consultant trained our employees on methods used.	.956	
ConsRo3	External consultant worked with our employees as a team member.	.948	
ConsRo4	External consultant transferred technology to our employees.	.936	
ConsRo5	External consultant used qualified and experienced people.	.973	
ConsRo6	External consultant provided adequate support to information systems in my bank.	.954	
ConsRo7	External consultant viewed by management at my bank as leader of IS initiative.	.913	
ConsRo8	External consultant made many of the major decisions about information systems in my bank.	.874	
ConsRo9	External consultant was in an advisory role and only assisted with decisions about IS only when invited.	.936	

All nine items were found to have a very high item-to-total correlation, and Cronbach's Alpha was 0.986 which is significantly higher than the acceptable level of 0.60.

5.3.3.5 Reliability Analysis Results for SISP External Factors in the Banking Sector

The main external factors of SISP in the banking sector include national culture, government and public organisations, international institutions, competitors and partners.

The reliability analysis results of the external environments are presented as follows. The results of reliability analysis for national culture, questionnaire question 13-1 (QQ13-1), are shown in Table 5.32.

Table 5.32: Reliability Statistics for National Culture

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ13-1	1. National culture.		**.787**
Exter1a	Religion.	.715	
Exter1b	Language.	.566	
Exter1c	Male/female separation in work environment.	.619	

All of the items were found to have a very high item-to-total correlation which was above the acceptable level of 0.30, and Cronbach's Alpha was 0.787 which is significantly higher than the acceptable level of 0.60. The results of the reliability analysis for the government and public organisations, questionnaire question 13-2 (QQ13-2), are shown in Table 5.33.

Table 5.33: Reliability Statistics for Government and Public Organisations (a)

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ13-2	2. Government and public organisations.		**.700**
Exter2a	Ministry of Finance.	.466	
Exter2b	Ministry of Interior.	**.219**	
Exter2c	Saudi Arabian Monetary Agency (SAMA).	.399	
Exter2d	Saudi Telecommunications Company (STC).	**.255**	
Exter2e	Saudi Electric.	.672	
Exter2f	Water Agency.	.617	

Two problematic items appeared, Exter2b and Exter2d, which were identified as not exhibiting sufficient item-total correlation scores (≥0.30). The two items were therefore removed and reliability analysis was repeated; the new results are shown in Table 5.34.

Table 5.34: Reliability Statistics for the Government and Public Organisations (b)

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ13-2	2. Government and public organisations.		**.762**
Exter2a	Ministry of Finance.	.531	
Exter2c	Saudi Arabian Monetary Agency (SAMA).	.416	
Exter2e	Saudi Electric.	.652	
Exter2f	Water Agency.	.671	

Table 5.34 shows that all the items had high item-to-total correlations and Cronbach's Alpha was significantly higher than acceptable. These results confirm that the scales used are reliable.

The results of the reliability analysis for the availability of international institutions, questionnaire question 13-3 (QQ13-3), are shown below in Table 5.35.

Table 5.35: Reliability Statistics for International Institutions

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ13-3	3. International Institutions.		**.863**
Exter3a	International Monetary Fund (IMF).	.808	
Exter3b	The World Bank.	.819	
Exter3c	Society for Worldwide Interbank Financial Telecommunication (SWIFT).	.577	
Exter3d	Bank for International Settlements (BIS).	.513	
Exter3e	Gulf Cooperative Council (GCC).	.714	

All items were found to have very high item-to-total correlations which were above the acceptable level of 0.30. The Cronbach's Alpha was 0.863 which is significantly higher than the acceptable level of 0.60.

Table 5.36 shows the reliability statistics for the competitors, questionnaire question 13-4 (QQ13-4), which confirms that the scales used are reliable and acceptable for further analysis.

Table 5.36: Reliability Statistics for Competitors

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ13-4	4. Competitors.		**. 792**
Exter4a	Insurance Companies.	.630	
Exter4b	Real Estates Offices.	.613	
Exter4c	National Banks.	.638	
Exter4d	Foreign Banks.	.576	

The results of the reliability analysis for the partners, questionnaire question 13-5 (QQ13-5), are shown in Table 5.37.

Table 5.37: Reliability Statistics for Partners

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ13-5	5. Partners.		**.863**
Exter5a	Central Bank.	.634	
Exter5b	VISA.	.833	
Exter5c	Master Card (MC).	.895	
Exter5d	American Express (AMEX).	.518	

All of the items were found to have a very high item-to-total correlation which was above the acceptable level of 0.30, and Cronbach's Alpha was 0.863 which again is significantly higher than the acceptable level of 0.60.

5.3.3.6 Reliability Analysis for External and Internal Measures of SISP Success in Banking Sector

The results of the reliability analysis of the external measures of SISP success in the banking sector, questionnaire question 14 (QQ14), are shown in Table 5.38.

Table 5.38: Reliability Statistics for External Measurements of SISP Success

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ14	External measurements of SISP success in the banking sector.		**.760**
Extmsur1	Cost reduction of services.	.501	
Extmsur2	Improving services quality to the public.	.698	
Extmsur3	Improving security.	.588	

All of the items were found to have a very high item-to-total correlation which was above the acceptable level; in addition, Cronbach's Alpha was also significant. This therefore confirms that the scales used are reliable and acceptable for further analysis.

In terms of internal measurements, Table 5.39 shows the reliability statistics for these measurements of SISP success in the banking sector, questionnaire question 15 (QQ15).

Table 5.39: Reliability Statistics for Internal Measurements of SISP Success

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ15	Internal measurements of SISP success in the banking sector.		**.750**
Intmsur1	Cost reduction.	.404	
Intmsur2	Improving market share.	.693	
Intmsur3	Increasing profit.	.679	

All items were found to have a very high item-to-total correlation, above the acceptable level of 0.30. The Cronbach's Alpha was 0.750 which is significantly higher than the acceptable level of 0.60.

5.3.3.7 Reliability Analysis Results for SISP Key Stakeholders' Influences in Banking Sector

As mentioned previously in the earlier chapters: the executives, business user directors and managers, IT directors and managers, and external consultants are the key stakeholders of SISP in the banking sector. Each stakeholder has his/her own role in SISP. These stakeholders' roles include: initiating, leading, involving, spending time and exerting power and they therefore have a direct influence on the success of SISP.

The first reliability analysis results for the executives, questionnaire questions 16-20 (1) (QQ16-20(1)), are shown in Table 5.40.

Table 5.40: Reliability Statistics for Executives (a)

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ16, 17, 18, 19, 20-1	1. Executives.		**.711**
Initiate1	Executives (initiate).	.613	
Lead1	Executives (lead).	.545	
Involve1	Executives (involve).	.653	
Timesp1	Executives (spend time).	**.164**	
Infpowr1	Executives (exert influence and power).	.410	

One problematic item, Timesp1, was identified as not exhibiting sufficient item-to-total correlation scores (≥0.30). Therefore, this item was removed and the reliability was re-calculated; the new results are presented in Table 5.41.

Table 5.41: Reliability Statistics for Executives (b)

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ16, 17, 18, 19, 20-1	1. Executives.		**.768**
Initiate1	Executives (initiate).	.668	
Lead1	Executives (lead).	.538	
Involve1	Executives (involve).	.675	
Infpowr1	Executives (exert influence and power).	.423	

Table 5.41 highlights that all items had a high item-to-total correlation; Cronbach's Alpha was also significantly higher than required. Therefore the scales used are reliable.

The second reliability analysis results are for business user directors and managers, questionnaire questions 16-20 (2) (QQ16-20(2)), presented in Table 5.42.

Table 5.42: Reliability Statistics for Business User Directors and Managers

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ16, 18, 19, 20-2	2. Business user directors and managers.		.709
Initiate2	Business user directors and managers (initiate).	.475	
Lead2	Business user directors and managers (lead).	.578	
Involve2	Business user directors and managers (involve).	.490	
Timesp2	Business user directors and managers (spend time).	.461	
Infpowr2	Business user directors and managers (exert influence and power).	.354	

Table 5.42 shows that all items had a high item-to-total correlation; Cronbach's Alpha was also significantly higher than acceptable. These results again confirm that the scales used are reliable.

The third reliability analysis results for the IT directors and managers, questionnaire questions 16-20 (3) (QQ16-20(3)), are displayed in Table 5.43.

Table 5.43: Reliability Statistics for IT Directors and Managers

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ16, 17, 18, 19, 20-3	3. IT directors & managers.		**.773**
Initiate3	IT directors and managers (initiate).	.519	
Lead3	IT directors and managers (lead).	.540	
Involve3	IT directors and managers (involve).	.616	
Timesp3	IT directors and managers (spend time).	.510	
Infpowr3	IT directors and managers (exert influence and power).	.604	

As Table 5.43 shows, all of the items had a high item-to-total correlation, and Cronbach's Alpha was significantly higher than acceptable. These results confirm that the scales used are reliable.

Finally, the reliability analysis results for the consultants, questionnaire questions 16-20(4) (QQ16-20(4)), are shown in Table 5.44.

Table 5.44: Reliability Statistics for Consultants

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ17, 18, 19, 20, 21-4	4. Consultants.		**.906**
Initiate4	Consultants (initiate).	.745	
Lead4	Consultants (lead).	.777	
Involve4	Consultants (involve).	.777	
Timesp4	Consultants (spend time).	.758	
Infpowr4	Consultants (exert influence and power).	.768	

All the items were found to have very high item-to-total correlations which were above the acceptable level of 0.30, and the Cronbach's Alpha was 0.906 which again is significantly higher than the acceptable level of 0.60.

5.3.3.8 Reliability Analysis Results for SISP Triggers in the Banking Sector

The results of the reliability analysis for the triggers or initiators for the need of SISP in the banking sector, questionnaire question 21 (QQ21), are shown in Table 5.45.

Table 5.45: Reliability Analysis Results for SISP Triggers in the Banking Sector (a)

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ21	Triggers or initiators for need of SISP in the banking sector.		**.746**
Inthngs1	New executive/s has been appointed.	.361	
Inthngs2	Changes in technology.	.689	
Inthngs3	Changes in organisation structure.	.640	
Inthngs4	Cost pressures.	.554	
Inthngs5	Need to improve IS performance.	.578	
Inthngs6	Changes incorporate business strategy.	.600	
Inthngs7	Failure in last project/s.	.488	
Inthngs8	No specific reason; we have always done it.	**-.206**	

One problematic item, Inthngs8, was identified as not exhibiting sufficient item-total correlation scores of (≥0.30)

Table 5.46: Reliability Analysis Results for SISP Triggers in the Banking Sector (b)

Item Code	Item	Item-Total Correlation	Cronbach's Alpha
QQ21	Triggers or initiators for need of SISP in the banking sector.		**.828**
Inthngs1	New executive/s has been appointed.	.402	
Inthngs2	Changes in technology.	.681	
Inthngs3	Changes in organisation structure.	.641	
Inthngs4	Cost pressures.	.614	
Inthngs5	Need to improve IS performance.	.649	
Inthngs6	Changes incorporate business strategy.	.642	
Inthngs7	Failure in last project/s.	.455	

Therefore, the item was removed, the reliability analysis was re-calculated and the new results are presented in Table 5.46. The table shows that all items had a high item-to-total correlation, and that the Cronbach's Alpha was significantly higher than acceptable. These results confirm that the scales used are reliable and acceptable for further analysis.

5.3.3.9 Summary of Reliability Analysis for the Main Constructs

Table 5.47, below, presents a summary of the reliability analysis for the main constructs in the present research which discussed in Chapters 2 and 3 and summarised in Figure 3.1.

Table 5.47: Reliability Analysis for the Main Constructs in the Present Research

Question Number	Dimension	Cronbach's Alpha	No. of Items
SISP Objectives in the Banking Sector			
1	Objectives for strategic information systems planning (SISP) in the banking sector.	.878	17
2	Achievements of SISP objectives in the banking sector.	.908	17
SISP Internal Contextual Factors in the Banking Sector			
6	Availability of business strategy in the banking sector.	.673	3
7	Alignment of information strategy with business strategy in the banking sector.	.913	12
10	Team members of strategic information systems planning in the banking sector.	.827	6
11	Top management commitment to SISP in the banking sector.	.884	5
12	Top management support for SISP in the banking sector.	.856	8
Functions of External Consultants in SISP in the Banking Sector			
9	Functions of external consultants with SISP in the banking sector.	.986	9
SISP External Contextual Factors in the banking sector			
13	1. National culture.	.787	3
	2. Government and public organisations.	.762	4
	3. International institutions.	.863	5
	4. Competitors.	.792	4
	5. Partners.	.863	4
External and Internal Measurements of SISP Success in the Banking Sector			
14	External measurements of SISP success in the banking sector.	.760	3
15	Internal measurements of SISP success in the banking sector.	.750	3
Influences of Key Stakeholders on SISP in the Banking Sector			
16, 17, 18, 19, 20	1. Executives.	.768	4
	2. Business user directors and managers.	.709	5
	3. IT directors and managers.	.773	5
	4. Consultants.	.906	5
SISP Triggers in the Banking Sector			
22	Triggers or initiators for need of SISP in the banking sector.	.828	7

The reliability coefficient 'Cronbach's Alpha' was higher than the acceptable level the acceptable level of 0.60; therefore the main constructs identified are acceptable for further analysis.

5.4 SISP Objectives in the Banking Sector *(Factor Analysis)*

The main objectives of SISP were identified and discussed in Chapter 2. In order to achieve the current research aims and in answering the first sub-question (RQ1: 'What are SISP objectives in the banking sector?'), the applicability of these objectives to the banking sector were examined. These objectives were then reduced using factor analysis techniques to explore SISP objectives in the banking sector. For this purpose, this section has been divided into two further parts. Section 5.4.1 will focus on the applicability of SISP objectives to the banking sector and section 5.4.2 will explore the SISP objectives in the banking sector.

5.4.1 Applicability of SISP Objectives to Banking Sector

As previously discussed in Chapter 2, 17 different objectives of Strategic Information Systems Planning (SISP) were identified by researchers from various industries, across several countries. To find the applicability of these objectives to the Saudi banking sector, a **mean** analysis was introduced, the results for which are presented in Table 5.48.

Chapter 5 explained the use of a 5-point Likert scale to measure each of the objectives, where 1 represented *'not at all'* and 5 represented *'to a very great extent'*. The following instructions were provided in the questionnaire: '*Below are possible objectives for Strategic Information Systems Planning (SISP). Please tick √ or circle the appropriate response that is relevant to your bank'.* The results are highlighted in Table 5.48; it appears that across all the objectives the mean is greater than 3, with a range between 3.13 and 4.14. In addition, the answers *'to a great extent'* and *'to a very great extent'* across the objectives represented between 35.1% and 79.6%, while the answers *'not at all'* and *'to a little extent'* represented between 3.8% and 24.2%.

Table 5.48: Objectives of SISP Mean and Mean Rank

Symbol	Items	% Not at All & To a Little Extent	% To a Great Extent & To a Very Great Extent	N	Mean	Mean Rank
Obj1	Identify strategic applications which are helping bank to achieve its goals.	3.8	66.9	157	3.89	3
Obj2	Align IS with business needs.	4.5	79.6	157	4.14	1
Obj3	Adopt or match goals of IS to change goals of bank.	22.9	50.9	157	3.32	14
Obj4	Understand strategic priorities of top management.	6.4	77.7	157	3.97	2
Obj5	Gain a competitive advantage from IS (e.g. more market share).	28	49	157	3.17	16
Obj6	Increase visibility of IS in the organisation.	12.7	57.9	157	3.52	9
Obj7	Improve communication about IS with users.	6.4	57.9	157	3.65	7
Obj8	Increase top management commitment to IS.	7	73.3	157	3.87	4
Obj9	Generate new ideas to reengineer business processes through IS.	14	52.8	157	3.58	8
Obj10	Envisage the future opportunities and prepare for the future.	8.3	67.5	157	3.83	5
Obj11	Identify IS applications.	24.2	45.2	157	3.27	15
Obj12	Identify new and higher payback applications.	19.7	35.1	157	3.13	17
Obj13	Forecast IS resource requirements.	13.4	59.3	157	3.52	10
Obj14	Allocate IS resources.	18.5	52.2	157	3.43	13
Obj15	Facilitate management and control of IS resources.	16.6	60.6	157	3.48	12
Obj16	Define new business strategies or modify existing ones.	15.3	53.5	157	3.50	11
Obj17	Develop technology policies and architecture.	14	63.1	157	3.66	6

In addition, a one-sample t-test was conducted to determine whether the observed means of the SISP objectives (see Table 5.48) were significantly different from the mid-point 3.0. The results are shown in Table 5.49.

Table 5.49: One-Sample t-Test of Statistical Significance of SISP Objectives

	Test Value = 3					
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of Difference	
	Lower	Upper	Lower	Upper	Lower	Upper
Identify strategic applications which are helping bank to achieve its goals.	12.652	156	.000	.885	.75	1.02
Align IS with business needs.	16.502	156	.000	1.140	1.00	1.28
Adopt or match goals of IS to change goals of bank.	2.754	156	.007	.229	.06	.39
Understand strategic priorities of top management.	8.254	156	.000	.650	.49	.81
Gain a competitive advantage from IS (e.g. more market share).	2.573	156	.011	.242	.06	.43
Increase visibility of IS in the organisation.	7.896	156	.000	.522	.39	.65
Improve communication about IS with users.	9.983	156	.000	.650	.52	.78
Increase top management commitment to IS.	12.601	156	.000	.873	.74	1.01
Generate new ideas to reengineer business processes through IS.	7.450	156	.000	.580	.43	.73
Envisage future opportunities and to prepare for future.	11.466	156	.000	.834	.69	.98
Identify IS applications.	3.365	156	.001	.268	.11	.42
Identify new and higher payback applications.	1.700	156	.091	.127	-.02	.28
Forecast IS resource requirements.	7.872	156	.000	.516	.39	.65
Allocate IS resources.	5.718	156	.000	.427	.28	.57
Facilitate management and control of IS resources.	7.155	156	.000	.478	.35	.61
Define new business strategies or modify existing ones.	5.983	156	.000	.503	.34	.67
Develop technology policies and architecture.	8.986	156	.000	.662	.52	.81

The results in Table 5.49, above, were found to be significantly different from the mid-point 3.0 ($p<0.10$). This confirms that all the variables of the SISP objectives were on the positive side. It should be noted that the significant contribution to this model was at the 0.10 level. A probability value level of below 0.10 (instead of 0.01 or 0.05) was accepted because this current study was exploratory in nature.

These findings indicate that the objectives of SISP, defined from different industries and various countries, can in fact be applied to the Saudi banking sector; this is a single industry, ‘banking’, and is in only one country, ‘Saudi Arabia’. However, the priorities

of these objectives might be different from one industry to another. In this research, as shown in Table 5.48, aligning the IS with the business needs was ranked first; understanding the strategic priorities of top management was ranked second; identifying the strategic applications which are helping the bank to achieve its goals was ranked third… and so on.

5.4.2 Exploring Objectives of SISP in Banking Sector

In order to reduce the number of SISP objectives, to make them more practical and achievable for the banking sector, factor analysis (FA) techniques were applied. FA techniques are generally used to condense (summarise) the information contained in a number of original variables into a smaller set of new composite dimensions or variates (factors) which have a minimum loss of information (Hair et al., 2006; Gorsuch, 1983; and Rummel, 1970). The following sub-sections describe the steps taken in reaching the final results of FA.

5.4.2.1 Exploratory Factor Analysis vs. Confirmatory Factor Analysis

Factor analysis is a multivariate statistical technique (this term was first introduced by Thurstone in 1931) and can be distinguished into two different types: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA examines the relationships between various items on an exploratory basis, without determining the extent to which the results fit a particular model; whereas, CFA compares the solution identified against a hypothetical model (Bryman and Cramer, 2001). In the present research, one of the main objectives was to explore the objectives of SISP in the Saudi banking sector by investigating the 17 objectives of SISP from the different industries, across several countries; hence, EFA was applied as an appropriate method.

5.4.2.2 Requirements for Conducting Factor Analysis

Before employing FA, certain requirements needed to be fulfilled. The first criterion relates to measurement issues and suggests that the items should be measured using interval scales (Hair et al., 2006). The present study fulfilled this requirement by using a 5-point Likert scale in the questionnaire.

The second criterion is sample size. The sample should be no smaller than 100 in size, because researchers generally will not use FA on a sample of fewer than 50 observations (Hair et al., 1998). The recommendations for 'item-to-response ratios' vary among researchers and include: 1:4 (Rummel, 1970); 1:5 (Gorsuch, 1983; Hair et al., 1998, 2006); and 1:10 (Schwab, 1980). In this study, the sample size is 157 and the item-to response ratio is 1:9, therefore the criterion is fulfilled.

The third criterion is *Bartlett's Test of Sphericity (BTS)* which examines the presence of correlation among items. If BTS is significant then it is indicative that the data are appropriate for FA (Field, 2005). As shown in Table 5.50, the results of BTS was large at 1286.887 and the associated significance value was very small (p=0.000); this also fulfilled the criterion.

Table 5.50: KMO and BTS

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.791
Bartlett's Test of Sphericity (BTS)	Approx. Chi-Squared	1286.887
	Df.	136
	Sig.	0.000

The fourth criterion is *Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy*. The KMO statistic varies between 0 and 1; Hutcheson and Sofroniou (1999) specify that values between 0.5 and 0.7 are mediocre, 0.7 and 0.8 are good, 0.8 and 0.9 are great, and above 0.9 are superb. In this study, as shown in Table 5.50, the KMO score was 0.791; thus, this requirement was fulfilled.

5.4.2.3 Main Decisions in Using Factor Analysis

In addition to the previous requirements, researchers need to consider what decisions are to be made in the actual process of FA. The first decision is associated with the form of FA used. The two most widely used forms are *principal components analysis (PCA)* and *principal axis factoring (PAF)*, the way that they estimate the communality is different (Bryman and Cramer, 2001). Simplistically, PAF derives a mathematical model from which factors are estimated, whereas, PCA merely decomposes the original data into a set of linear variates (Dunteman, 1989; Field, 2005). In other words, whilst PAF can only estimate the underlying factors, and relies on various assumptions for these estimates to be accurate, PCA is concerned with establishing which linear components exist within the data and how a particular variable might contribute to that component (Field, 2005). In this study, PCA was applied because it was more appropriate for identifying the latent constructs which were underlying the measured variables, rather than data reduction per se (Fabrigar et al., 1999).

The second decision is associated with a factor rotation, which aims to maximise the loadings of some of the items and improve the interpretability of the factors. The most common methods are *varimax orthogonal rotation* which produces factors independent of one another, and *oblique rotation* which allows factors to be correlated (Bryman and Cramer, 2001). In the present research, varimax rotation was employed because there was an expectation that some SISP objectives in the banking sector were not correlated.

The third decision to be made is associated with the number of factors to be retained. The two methods are *Kaiser's criterion* and *graphical scree test*. Kaiser (1974) recommended retaining all factors with eigenvalues greater than 1. According to Stevens (1996), Kaiser's criterion is appropriate for situations where the number of variables is fewer than 30 and all communalities after extraction are greater than 0.70

or when the number of participants is greater than 250 and the average communality is greater than or equal to 0.60. In contrast, the graphical scree test is used to draw a graph of the descending variances accounted for by the factors initially extracted (Bryman and Cramer, 2001) and is appropriate with a sample of more than 200 participants. In the current research, Kaiser's criterion was employed because the situations were confirmed to be appropriate (as explained in the following two tables).

Table 5.51: Total Variance Explained

Factor	Eigenvalues	Variance Explained (%)	Cumulative Variance (%)
1	6.040	35.530	35.530
2	1.794	10.553	46.083
3	1.510	8.881	54.964
4	1.305	7.676	62.641
5	1.060	6.233	68.874

Extraction Method: Principal Component Analysis.

Table 5.51 shows an initial (un-rotated) solution which identified 17 items and five factors with eigenvalues of more than 1; this accounted for 68.874% of the variance. Furthermore, Table 5.52 shows that the 17 variables scored high communalities which ranged from 0.470 to 0.854 with an average communality equal to 0.689.

The last decision is concerned with factor loading, which focuses on the degree of correlation between the factors and items. Hair et al. (1998, 2006) suggest that factor loadings greater than ±0.30 are considered to be the minimal level, loadings of ±0.40 are more important, and loadings of ±0.50 or greater are deemed to be practically significant. In this study, ±0.50 was determined for use since it is practically significant.

Table 5.52: Communalities

	Initial	Extraction
Identify strategic applications which are helping bank to achieve its goals.	1.000	0.470
Align IS with business needs.	1.000	0.692
Adopt or match the goals of IS to change goals of the bank.	1.000	0.673
Understand strategic priorities of top management.	1.000	0.618
Gain a competitive advantage from IS (e.g. more market share).	1.000	0.617
Increase visibility of IS in the organisation.	1.000	0.854
Improve communication about IS with users.	1.000	0.835
Increase top management commitment to IS.	1.000	0.706
Generate new ideas to reengineer business processes through IS.	1.000	0.797
Envisage future opportunities and prepare for future.	1.000	0.650
Identify IS applications.	1.000	0.738
Identify new and higher payback applications.	1.000	0.514
Forecast IS resource requirements.	1.000	0.746
Allocate IS resources.	1.000	0.831
Facilitate management and control of IS resources.	1.000	0.656
Define new business strategies or modify existing ones.	1.000	0.626
Develop technology policies and architecture.	1.000	0.687

Extraction Method: Principal Component Analysis.

5.4.2.4 Factor Analysis for SISP Objectives in Banking Sector

Having clarified the requirements and main decisions, it is now time to present the FA results of SISP objectives in the banking sector. It was firstly confirmed that conducting FA was appropriate since the sample size was sufficient (responses = 157; variables = 17; average communalities = 0.689), the KMO value was 0.791, and the BTS was highly significant (p = 0.000) (see Table 5.50). An initial un-rotated solution with PCA identified five factors with eigenvalues of larger than 1.0, accounting for 68.874% of the variance (see Table 5.51).

Table 5.53: Rotated Component Matrix [a]

Variables	Component				
	F1	F 2	F 3	F 4	F 5
Allocate IS resources.	.873				
Facilitate management and control of IS resources.	.784				
Identify IS applications.	.677				
Identify new and higher payback applications.	.638				
Identify strategic applications which are helping bank to achieve its goals.	.587				
Generate new ideas to reengineer business processes through IS.		.798			
Envisage future opportunities and prepare for future.		.674			
Define new business strategies or modify existing ones.		.657			
Improve communication about IS with users.			.880		
Increase visibility of IS in the organisation.			.873		
Increase top management commitment to IS.			.553		
Adopt or match goals of IS to change goals of bank.				.739	
Understand strategic priorities of top management.				.711	
Gain competitive advantage from IS (e.g. more market share).				.657	
Develop technology policies and architecture.					.789
Align IS with business needs.					.691
Forecast IS resource requirements.					.608

Factor loadings less than .50 have not been printed and variables have been sorted by loadings on each factor.
Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalisation.
[a] Rotation converged in 7 iterations.

All of the factor loadings were higher than 0.5, therefore each item loaded higher on its associated construct than on any other construct. This supported the discriminant validity of the measurement. These factors will be used in further analysis (see section 5.4), therefore their reliabilities were examined. Table 5.54 shows the reliability analysis and Cronbach's Alpha for the five factors.

Table 5.54: Factor Loading and Cronbach's Alpha Analysis

	Factor Loading	Cronbach's Alpha
Factor 1		**.820**
Allocate IS resources.	.873	
Facilitate the management and control of IS resources.	.784	
Identify IS applications.	.677	
Identify new and higher payback applications.	.638	
Identify strategic applications which are helping bank to achieve its goals.	.587	
Factor 2		**.750**
Generate new ideas to reengineer business processes through IS.	.798	
Envisage future opportunities and to prepare for future.	.674	
Define new business strategies or modify existing ones.	.657	
Factor 3		**.809**
Improve communication about IS with users.	.880	
Increase visibility of IS in the organisation.	.873	
Increase top management commitment to IS.	.553	
Factor 4		**.645**
Adopt or match goals of IS to change goals of bank.	.739	
Understand strategic priorities of top management.	.711	
Gain a competitive advantage from IS (e.g. more market share).	.657	
Factor 5		**.723**
Develop technology policies and architecture.	.789	
Align IS with business needs.	.691	
Forecast IS resource requirements.	.608	

5.4.2.5 Naming and Interpreting Factors of SISP Objectives in Banking Sector

When a satisfactory factor solution has been derived, the researcher then attempts to assign some meaning to the factors. According to Hair et al. (2006), variables with higher loadings influence to a greater extent the name which is selected to represent a factor; the process of naming factors is therefore based on the subjective opinion of the researcher. In the present study, the results of Table 5.55 illustrate this procedure.

Table 5.55: Results of Factor Analysis for SISP Objectives

SISP Objectives	Component				
	Factor 1 Planning	Factor 2 Leading	Factor 3 Improving	Factor 4 Achieving	Factor 5 Aligning
Allocate IS resources.	.873				
Facilitate the management and control of IS resources.	.784				
Identify IS applications.	.677				
Identify new and higher payback applications.	.638				
Identify strategic applications which are helping bank to achieve its goals.	.587				
Generate new ideas to reengineer business processes through IS.		.798			
Envisage future opportunities and to prepare for future.		.674			
Define new business strategies or modify existing ones.		.657			
Improve communication about IS with users.			.880		
Increase visibility of IS in the organisation.			.873		
Increase top management commitment to IS.			.553		
Adopt or match goals of IS to change goals of bank.				.739	
Understand strategic priorities of top management.				.711	
Gain a competitive advantage from IS (e.g. more market share).				.657	
Develop technology policies and architecture.					.789
Align IS with business needs.					.691
Forecast IS resource requirements.					.608
Initial Eigenvalues	6.040	1.794	1.510	1.305	1.060
% of Variance	35.530	10.553	8.881	7.676	6.233
Cumulative %	35.530	46.083	54.964	62.641	68.874

The factor solution was derived from a component analysis with a varimax rotation of 17 perceptions of SISP objectives. The cut-off point for interpretation purposes was any loadings of +.50 or above. In Table 5.55, any loadings below .50 were omitted and not printed; the variables were then sorted by their loadings on each factor. A marked pattern of variables with high loadings for each factor is evident. Factor 1 has five variables with significant loadings, and Factors 2, 3, 4 and 5 have three variables each. Each factor can be named based on its related variables and significant loadings:

Factor 1: *Planning and deployment of information systems: Obj14 - allocate IS resources; Obj15 - facilitate management and control of IS resources; Obj11 - identify IS applications; Obj12 - identify new and higher payback applications; and Obj1 - identify strategic applications which are helping the bank to achieve its goals.*

Factor 2: *Leading organisation changes: Obj9 - generate new ideas to reengineer business processes through IS; Obj10 - envisage future opportunities and prepare for the future; and Obj16 - define new business strategies or modify existing ones.*

Factor 3: *Improving stakeholder involvement and communication: Obj7 - improve communication about IS with users; Obj6 - increase visibility of IS in the organisation; and Obj8 - increase top management commitment to IS.*

Factor 4: *Achieving strategic priorities: Obj3 - adopt or match goals of IS to change the goals of the bank; Obj4 - understand strategic priorities of top management; and Obj5 - gain competitive advantage from IS (e.g. more market share).*

Factor 5: *Aligning organisational policies and architecture for the business and the IS: Obj17 - develop technology policies and architecture; Obj2 - align IS with the business needs; and Obj13 - forecast IS resource requirements.*

Therefore, it is possible to state that the Saudi banking sector has five objectives for SISP which are: 1) planning and deployment of information systems; 2) leading organisation changes; 3) improving stakeholder involvement and communication; 4)

achieving strategic priorities; and 5) aligning of organisational policies and architecture for the business and IS.

5.5 Regression Analysis

Regression has become one of the most widely used techniques in the analysis of social science data. It is a powerful tool for summarising the nature of the relationship between variables and for making predictions concerning the dependent variable and its likely values (Bryman and Cramer, 2001). There are two kinds of linear regression: simple or two-variable regression and multiple regression (Kinnear and Gray, 1999). In the simple, two-variable regression, the values of one variable (the dependent variable, *DV*, y) are estimated from those of another (the independent variable, *IV*, x) by a linear (straight line) equation. In multiple regression, the values of one variable (the dependent variable, *DV*, y) are estimated from those of two or more other variables (independent variables, *DV*; X1, X2...). Multiple regression is therefore more suitable for the current research because it can explore the relationship between SISP success (one dependent variable) and the factors influencing SISP in the banking sector (two or more independent variables). The key methodological options and assumptions of multiple regression are discussed below.

5.5.1 Key Methodological Options

There are three major analytical options in multiple regression: firstly, standard multiple regression; second, sequential regression; third, stepwise regression (Tabachinck and Fidell, 2001). For standard multiple regression, all of the independent variables are entered into the equation at once; each one is assessed as if it had entered the regression after all the other independent variables had entered. This option is useful for simply

assessing the relationships among variables. For sequential regression, the order of entry of the independent variables is assigned according to the theoretical considerations; thus, it can be used to test explicit hypotheses. Finally, for stepwise regression, decisions about which variables are included and which are omitted from the equation are based solely upon the statistics. Thus it appears that chance is being capitalised on: the decision to include certain variables is dependent upon the potentially minor statistical differences computed from a single sample and some variability in the statistics, from sample to sample, is expected. In this respect, stepwise regression also considers over-fitting data because the equation is derived from a single sample which may be too close to the sample and therefore may not generalise well to the population (Tabachinck and Fidell, 2001).

The literature review failed to identify any particular research which looked specifically at the relationships between SISP success and the factors influencing SISP in the Saudi banking sector context. The present research therefore intends to simply explore these relationships without any specific hypotheses, hence the method of choice here was standard multiple regression.

5.5.2 Assumptions for Using Multiple Regression

The first key assumption to be considered is ‘sample size’. According to Hair et al. (2006), the size of the sample has a direct impact on the appropriateness and the statistical power of multiple regression. In order to generalise the results, multiple regression requires a minimum sample of 50, with preferably 100 observations for most research situations; this requirement was fulfilled in the present research.

Another assumption is the 'cross-validation of the model', which refers to assessing the accuracy of a model across different samples. SPSS reports figures of: *R-squared (R^2)*, which measures to what extent the variance in the outcome *(Y)* is accounted for by the regression model from the sample; and *adjusted R^2*, which measures how much variance in Y would be accounted for if the model had been derived from the population from which the sample was taken (Harraway, 1995). In this study, the figures of adjusted R^2 and R^2 were compared, since the closer a figure of adjusted R^2 is to R^2, the better the cross-validation of the model is (Field, 2005). The differences in the final regression models ranged from 0.017 to 0.047, which shows that had the models been derived from the population rather than this sample, it would account for 1.7% to 4.7% less variance in the outcome. The differences were small and, accordingly, the researcher judged that the cross-validity of the models was good.

The third assumption to be mentioned is the 'independency of residuals' in the model. SPSS includes the option of the *Durbin-Watson test statistic*, which tests whether adjacent residuals are correlated. The test statistic varies between 0 and 4, with a value of 2 meaning that the residuals are uncorrelated, and as a general rule, values of less than 1 or greater than 3 are problematic (Field, 2005). In this study, all regression models had values closer to 2 which were acceptable and fulfilled this requirement.

The last assumption to be considered is 'no multicollinearity' in the model. Two of the common measures for assessing multicollinearity are the *tolerance* value and its inverse, the *variance inflation factor (VIF)*. Tolerance refers to the amount of variability of the selected independent variable not explained by the other independent variables, thus very small tolerance values and large VIF denote high collinearity (Hair et al., 1998). It is generally believed that tolerance levels of: below 0.1 indicate a serious

problem; 0.2 a potential problem (Menard, 1995); and if the largest VIF is greater than 10 (Mayer, 1990), or the average VIF is substantially greater than 1 (Bowerman and O'Connell, 1990), then there is cause for concern. All of the regression models fulfilled this requirement; hence, the assumption of 'no multicollinearity' was achieved in this study.

With clarification of the key options and assumptions, the results of the regression analysis are presented in the following sections. It must be noted that a significant contribution to regression models was accepted at the 0.10 level. The reason for accepting a probability value of below 0.10 (instead of 0.01 or 0.05) was because the present study was exploratory in nature and did not have any specific hypotheses; hence, any kind of potential relationships between independent and dependent variables should not be neglected (Fukushige, 2006).

5.6 Relationship between Objectives' Achievement and SISP Success

The factor analysis results, previously discussed (see section 5.4.2), separated the 17 SISP Objectives into 5 factors. **Factor 1** was named Planning and deployment of information systems, and consists of 5 items: 1) Obj14 - allocate IS resources; 2) Obj15 - facilitate management and control of IS resources; 3) Obj11 - identify IS applications; 4) Obj12 - identify new and higher payback applications; and 5) Obj1 - identify strategic applications which are helping the bank to achieve its goals. **Factor 2** was named Leading organisation change, and consists of 3 items: 1) Obj9 - generate new ideas to reengineer business processes through IS; 2) Obj10 - envisage future opportunities and prepare for the future; and 3) Obj16 - define new business strategies

or modify the existing ones. **Factor 3** was named Improving stakeholder involvement and communication, and consists of 3 items: 1): Obj7 - improve communication about IS with users; 2) Obj6 - increase visibility of IS in the organisation; and 3) Obj8 - increase top management commitment to IS. **Factor 4** was named Achieving the strategic priorities, and consists of 3 items: 1) Obj3 - adopt or match the goals of IS to change the goals of the bank; 2) Obj4 - understand strategic priorities of top management; and 3) Obj5 - gain competitive advantage from IS (e.g. more market share). Finally, **Factor 5** was named Aligning organisational policies and architecture for business and IS, and consists of 3 items: 1) Obj17 - develop technology policies and architecture; 2) Obj2 - align IS with the business needs; and 3) Obj13 - forecast IS resource requirements.

In addition, Tables 5.23 and 5.24, as previously discussed, contain the same items but with different functions. Table 5.23 describes the SISP objectives in the banking sector (Obj1 to Obj17), while Table 5.24 provides information about their achievement (ObjAch1 to ObjAch17).

To test the effect of SISP achievement (ObjAch1 to ObjAch17) on SISP success, an analysis will be made by regressing SISP success on the five factors of SISP achievement. In that regression, the score for each factor was obtained by averaging the score of items loaded on each factor. For example, the score for achievement of the objective of Planning and deployment of information systems (Factor 1) comes from the average score of the factor's items: allocate IS resources (ObjAch14); facilitate the management and control of IS resources (ObjAch15); identify IS applications (ObjAch11); identify new and higher payback applications (ObjAch12); and identify strategic applications which are helping the bank to achieve its goals (ObjAch1).

To investigate the relationship, and by entering all the variables in a single block, it was found that the proposed model explained a significant percentage of variance in SISP success. Table 5.56 shows that the five independent variables accounted for 47.0 % of the variation ($R^2 = 0.487$, adjusted $R^2 = 0.470$).

Table 5.56: Model Summary [b](Achievements)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.698(a)	.487	.470	.471	1.662

a Predictors: (Constant), GObjAch5, GObjAch4, GObjAch3, GObjAch2, GObjAch1.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test, as presented in Table 5.57, will be inspected.

Table 5.57: ANOVA [b] (Achievements)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	31.892	5	6.378	28.721	.000(a)
	Residual	33.534	151	.222		
	Total	65.427	156			

a Predictors: (Constant), GObjAch5, GObjAch4, GObjAch3, GObjAch2, GObjAch1.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 28.721 and was significant (F - value = 28.721, $P = 0.000$). Since the observed significance level was less than 0.10, the results indicate that the model is adequate and that the five variables of objectives' achievement together influence SISP success.

To further test whether the achievement of each of the five objectives affects the success of SISP, the coefficient of achievement of each objective, its t-statistic and its observed significance level (presented in Table 5.58), will be inspected.

Table 5.58: Results of Regression Coefficients [a] (Achievements)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.006	.244		4.117	.000		
	GObjAch1	.037	.112	.037	.330	.742	.268	3.737
	GObjAch2	.265	.082	.289	3.242	.001	.426	2.345
	GObjAch3	.137	.073	.147	1.883	.062	.553	1.807
	GObjAch4	.241	.057	.305	4.248	.000	.657	1.522
	GObjAch5	.087	.107	.082	.808	.420	.333	3.000

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results, from Table 5.58, indicate that *leading organisation changes (GObjAch2), improving stakeholder involvement and communication (GObjAch3),* and *achieving the strategic priorities (GObjAch4)* significantly affect the success of SISP in the banking sector. The coefficients for each objective were: *leading organisation changes (GObjAch2),* B = 0.265 (t = 3.242, p = 0.001); *improving stakeholder involvement and communication (GObjAch3),* B = 0.137 (t = 1.883, p = 0.062)*;* and *achieving the strategic priorities (GObjAch4),* B = 0.241 (t = 4.248, p = 0.000). However, *planning and deployment of IS (GObjAch1)* and *aligning organisational policies and architecture for business and IS (GObjAch5)* did not significantly affect the success of SISP in the banking sector because their coefficients were B = 0.037 (t = 0.330, p = 0.742) and B = 0.087 (t = 0.808, p = 0.420), respectively. The results thus indicate that *leading organisation changes (GObjAch2), improving stakeholder involvement and communication (GObjAch3),* and *achieving the strategic priorities (GObjAch4)* all have positive impacts upon the success of SISP. Concurrently, *planning and deployment of IS (GObjAch1)* and *aligning organisational policies and architecture for business and IS (GObjAch5)* appear to have no impact upon the success of SISP.

These findings help in providing an answer to the second research sub-question (RQ2:

'What are the main elements of SISP objectives in the banking sector which, when achieved, influence the success of SISP?'), and will be discussed in detail in Chapter 7 within the research findings and discussions.

5.7 SISP Internal Contextual Factors in Banking Sector

The availability of the business strategy, the alignment of the IS strategy with the business strategy, the team members of SISP, and the management commitment and support are the internal contextual factors affecting SISP. Particular elements of these internal contextual factors could directly affect the success of SISP. To identify these effects and in order to answer the third research sub-question, (RQ3: 'What are the main elements, the internal contextual factors, of SISP which affect the success of SISP in the banking sector?'), the relationship between these elements and SISP success are examined; the results are presented as follows.

5.7.1 Relationship between Availability of Business Strategy and SISP Success

Table 5.59 shows that the three independent variables, of the availability of business strategy, account for 11.9 % of the variation in the success of SISP (R^2 = .136, adjusted R^2 = .119).

Table 5.59: Model Summary [b] (Availability of Business Strategy)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.369(a)	.136	.119	.608	1.834

a Predictors: (Constant), bank procedures and work-flow are clear, professional banking staff are aware of bank partners, professional banking staff are aware of bank competitors.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test (presented in Table 5.60) will be inspected.

Table 5.60: ANOVA [b] (Availability of Business Strategy)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.899	3	2.966	8.029	.000(a)
	Residual	56.527	153	.369		
	Total	65.427	156			

a Predictors: (Constant), professional banking staff are aware of the bank's competitors, professional banking staff know the business of the bank, professional banking staff are aware of the bank's partners.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 8.029 and was significant (F- value = 8.029, *P* = 0.000). Since the observed significance level was less than 0.10, the results again indicate that the model is adequate and that the three variables, of the availability of business strategy, together influence SISP success. To further test whether each of these variables affects SISP success, the coefficient of each, its t-statistic and its observed significance level (presented in Table 5.61), will be inspected.

Table 5.61: Results of Regression Coefficients [a] (Availability of Business Strategy)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.031	.342		5.930	.000		
	Professional banking staff know the business of the bank.	.365	.095	.337	3.835	.000	.711	1.406
	Professional banking staff are aware of the bank's partners.	.052	.077	.065	.675	.501	.613	1.632
	Professional banking staff are aware of bank competitors.	-.011	.054	-.018	-.205	.838	.739	1.353

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results from Table 5.61 indicate that *professional banking staff know the business of the bank* and that this significantly affects SISP success in the banking sector, its coefficient was B = 0.365 (t = 3.835, p = 0.000). However, the *professional banking*

staff's awareness of the bank's partners, and the *professional banking staff's awareness of the bank's competitors* did not appear to significantly affect the success of SISP in the banking sector because their coefficients were B = 0.052 (t = 0.675, p = 0.501) and B = 0.011 (t = 0.205, p = 0.838), respectively.

These results indicate that when *professional banking staff know the business of the bank,* it has a positive impact on the success of SISP. Conversely, when the *professional banking staff are aware of bank's partners* and the *professional banking staff are aware of bank's competitors,* it appears to have no impact upon SISP success.

5.7.2 Relationship between Alignment of the IS Strategy with Business Strategy and SISP Success

To investigate the relationship, and by entering all the variables in a single block, the proposed model was found to explain a significant percentage of variance in SISP success.

Table 5.62: Model Summary [b] (Alignment)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.668(a)	.446	.400	.502	1.858

a Predictors: (Constant), users participate actively in IS planning, IS management is knowledgeable about business, IS staff are able to keep up with IT advancements, there is frequent communication between users and IS departments, the corporate business plan is made available to IS management, top management is knowledgeable about IS, business goals and objectives are made known to IS management, the IS department provides efficient services, business and IS management work together in prioritising applications development, top management has confidence in the IS department, the IS department is responsive to user needs, the IS department provides reliable services.

b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

Table 5.62 shows that the twelve independent variables, of the alignment of IS strategy with business strategy, account for 40% of the variation in SISP success (R^2 = 0.446,

adjusted $R^2 = 0.400$). In order to test the regression model adequacy, the results of the ANOVA test, as presented in Table 5.63, will now be inspected.

Table 5.63: ANOVA [b] (Alignment)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29.189	12	2.432	9.666	.000(a)
	Residual	36.238	144	.252		
	Total	65.427	156			

a Predictors: (Constant), users participate actively in IS planning, IS management is knowledgeable about business, IS staff are able to keep up with IT advancements, there is frequent communication between users and IS departments, the corporate business plan is made available to IS management, top management is knowledgeable about IS, business goals and objectives are made known to IS management, the IS department provides efficient services, business and IS management work together in prioritising applications development, top management has confidence in the IS department, the IS department is responsive to user needs, the IS department provides reliable services.

b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 9.666 and was significant (F – value = 9.666, $P = 0.000$). Since the observed significance level was less than 0.10, the results indicate that the model is adequate and that the twelve variables, of the alignment of the IS strategy with the business strategy, together influence the success of SISP.

Again, to further test whether each of these variables affects SISP success, the coefficient of each, its t-statistic and its observed significance level will be inspected (see Table 5.64).

Table 5.64: Results of Regression Coefficients [a] (Alignment)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.856	.254		7.311	.000		
	IS staff are able to keep up with IT advancements.	.160	.070	.189	2.290	.023	.567	1.763
	Business goals and objectives are made known to IS management.	.134	.068	.177	1.958	.052	.469	2.134
	The IS department is responsive to user needs.	-.207	.089	-.257	-2.335	.021	.317	3.151
	IS management is knowledgeable about business.	-.043	.078	-.053	-.557	.579	.426	2.349
	Top management has confidence in the IS department.	-.125	.084	-.158	-1.491	.138	.344	2.910
	The IS department provides efficient services.	-.151	.104	-.180	-1.459	.147	.253	3.954
	The IS department provides reliable services.	.336	.113	.392	2.964	.004	.220	4.550
	There is frequent communication between users and IS department.	-.082	.069	-.104	-1.196	.233	.510	1.961
	Business and IS management work together in prioritising applications development.	.213	.064	.344	3.339	.001	.363	2.752
	Top management is knowledgeable about IS.	.018	.065	.028	.277	.782	.384	2.606
	The corporate business plan is made available to IS management.	.146	.065	.216	2.231	.027	.412	2.427
	Users participate actively in IS planning.	.178	.057	.255	3.110	.002	.574	1.742

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results from Table 5.64 indicate that the following elements significantly affected SISP success in the banking sector: *IS staff are able to keep up with IT advancements; business goals and objectives are made known to IS management; the IS department is responsive to user needs; the IS department provides reliable services; business and IS management work together in prioritising applications development; the corporate business plan is made available to IS management;* and the *users participate actively in IS planning,* and their respective significant coefficients are listed as follows: B = 0.160 (t = 2.290, p = 0.023), B = 0.134 (t = 1.958, p = .052), B = -0.207 (t = -2.335, p = .021),

B = 0.336 (t = 2.964, p = .004), B = 0.213 (t = 3.339, p = 0.001), B = 0.146 (t = 2.231, p = 0.027), and B = 0.178 (t = 3.110, p = 0.002).

However, in contrast the following elements did not significantly affect SISP success in the banking sector: *IS management is knowledgeable about business; top management has confidence in the IS department; the IS department provides efficient services; there is frequent communication between users and IS department;* and *top management is knowledgeable about IS*. They were not significant because their coefficients were B = -0.043 (t = -0.557, p = 0.579), B = -0.125 (t = -1.491, p = 0.138), B = -0.151 (t = -1.459, p = 0.147), B = -0.082 (t = -1.196, p = 0.233), and B = 0.018 (t = 0.227, p = 0.782), respectively.

These interpretations indicate that the following elements have positive impacts upon SISP success: *IS staff are able to keep up with IT advancements; business goals and objectives are made known to IS management; the IS department provides reliable services; business and IS management work together in prioritising applications development; the corporate business plan is made available to IS management;* and *users participate actively in IS planning*. On the other hand, when *the IS department is responsive to user needs* it can have a negative impact upon the success of SISP. At the same time, the following elements appear to have no impact upon SISP success: the *IS management is knowledgeable about business; top management has confidence in the IS department; the IS department provides efficient services; there is frequent communication between users and IS department;* and *top management is knowledgeable about IS*.

5.7.3 Relationship between the Team Members of SISP and SISP Success

The six independent variables of team members of SISP account for 35.40% of the variation in SISP success ($R^2 = 0.379$, adjusted $R^2 = 0.354$), as shown in Table 5.65.

Table 5.65: Model Summary [b] (Team Members)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.615(a)	.379	.354	.521	1.814

a Predictors: (Constant), team members were briefed about the scope and goals of the project, the organisation's mission and purpose, and its internal and external environments, teams were drawn from the organisational levels responsible for implementing the plan, team members with high credibility were chosen, IT personnel were trained about organisational objectives and key issues, the planning team was informed about business changes taking place during the strategic planning for information systems, team members were chosen on the basis of competency.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test (presented in Table 5.66) will be now inspected.

Table 5.66: ANOVA [b] (Team Members)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	24.783	6	4.131	15.244	.000(a)
	Residual	40.643	150	.271		
	Total	65.427	156			

a Predictors: (Constant), team members were briefed about the scope and goals of the project, the organisation's mission and purpose, and its internal and external environments, teams were drawn from the organisational levels responsible for implementing the plan, team members with high credibility were chosen, IT personnel were trained on organisational objectives and key issues, the planning team was informed about business changes taking place during the strategic planning for information systems, team members were chosen on the basis of competency.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 15.244 and was therefore significant (F – value = 15.2444, $P = 0.000$).

Since the observed significance level was less than 0.10, the results indicate that the model is adequate and the six variables, of team members of SISP, together influence SISP success. To further test whether each of these variables affects SISP success, the coefficient of each, its t-statistic and its observed significance level (presented in Table 5.67) will be inspected.

Table 5.67: Results of Regression Coefficients [a] (Team Members)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.004	.263		7.633	.000		
	Team members with high credibility were chosen.	.018	.092	.018	.196	.845	.515	1.940
	Team members were chosen on the basis of competency.	.210	.067	.301	3.110	.002	.441	2.268
	Teams were drawn from the organisational levels responsible for implementing the plan.	-.061	.051	-.091	-1.179	.240	.691	1.446
	The planning team was informed about business changes taking place during the strategic planning for IS.	.105	.071	.138	1.483	.140	.479	2.086
	IT personnel were trained on organisational objectives and key issues.	.177	.067	.251	2.656	.009	.463	2.160
	Team members were briefed about the scope and goals of the project, the organisation's mission and purpose, and its internal and external environments.	.045	.070	.068	.645	.520	.370	2.700

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results from Table 5.67 indicate that *team members were chosen on the basis of competency*, B = 0.210 (t = 3.110, p = 0.002), and that *IT personnel were trained on organisational objectives and key issues*, B = 0.117 (t = 2.656, p = 0.009); therefore, they both significantly affect SISP success in the banking sector.

However, the following elements do not appear to significantly affect the success of SISP in the banking sector, (see their respective coefficients): *team members with high credibility were chosen*, B = -0.018 (t = -0.196, p = 0.845); *teams were drawn from the organisational levels responsible for implementing the plan*, B = -0.061 (t = -1.179, p = 0.240); *the planning team was informed about business changes taking place during the strategic planning for information systems*, B = 0.105 (t = 1.483, p = 0.140); and *team members were briefed about the scope and goals of the project, the organisation's mission and purpose, and its internal and external environments*, B = 0.045 (t = -0.645,

p = 0.520).

These results indicate that *team members were chosen on the basis of competency* and *IT personnel were trained about organisational objectives and key issues* and therefore positively impact upon SISP success. However, in contrast: *team members with high credibility were chosen; teams were drawn from the organisational levels responsible for implementing the plan; the planning team was informed about business changes taking place during the strategic planning for information systems;* and *team members were briefed about the scope and goals of the project, the organisation's mission and purpose, and its internal and external environments* all had no impact upon the success of SISP.

5.7.4 Relationship between Top Management Commitment and SISP Success

Table 5.68, below, shows that the five independent variables of the management commitment account for 25.30% of the variation in SISP success (R^2 = 0.277, adjusted R^2 = 0.253).

Table 5.68: Model Summary [b] (Top Management Commitment)

Model	R	R [2]	Adjusted R [2]	Std. Error of Estimate	Durbin-Watson
1	.526(a)	.277	.253	.560	1.816

a Predictors: (Constant), senior management's key planning issues were determined at the beginning, a top executive championed SISP process, senior managements were briefed throughout the project to ensure their commitment, executives were briefed on the process's scope, objectives, and approaches to obtain their commitment, senior management provided feedback and guidance throughout the process.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test, presented in Table 5.69, will be inspected.

Table 5.69: ANOVA [b] (Top Management Commitment)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	18.122	5	3.624	11.570	.000(a)
	Residual	47.304	151	.313		
	Total	65.427	156			

a Predictors: (Constant), senior management's key planning issues were determined at the beginning, a top executive championed SISP process, senior management were briefed throughout the project to ensure their commitment, executives were briefed on the process's scope, objectives, and approaches to obtain their commitment, senior management provided feedback and guidance throughout the process.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 11.570 and was significant (F – value = 11.570, P = 0.000). Since the observed significance level was less than 0.10, the results indicate that the model is adequate and that the five variables, of management commitment of SISP together influence SISP success.

To further test each of these variables and their effects on SISP success, the coefficient of each, its t-statistic and its observed significance level will be inspected, see the following table (Table 5.70).

Table 5.70: Results of Regression Coefficients [a] (Top Management Commitment)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.316	.208		11.157	.000		
	A top executive championed SISP process.	-.023	.055	-.039	-.413	.680	.531	1.884
	Senior management provided feedback and guidance throughout the process.	.063	.096	.091	.658	.512	.251	3.976
	Senior management were briefed throughout the project to ensure their commitment.	.146	.092	.205	1.590	.114	.289	3.457
	Executives were briefed on the process's scope, objectives, and approaches to obtain their commitment.	-.066	.093	-.094	-.711	.478	.275	3.639
	Senior management's key planning issues were determined at the beginning.	.246	.075	.387	3.287	.001	.345	2.897

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results from Table 5.70 indicate that *senior management's key planning issues were determined at the beginning*, with B = 0.246, (t = 3.287, p = 0.001) which significantly affects SISP success in the banking sector. However, in contrast, the following elements did not significantly affect SISP success in the banking sector, (see their respective coefficients): *a top executive championed SISP process*, B = -0.023 (t = -0.413, p = 0.680); *senior management provided feedback and guidance throughout the process*, B = 0.063 (t = 0.658, p = 0.512); *senior management were briefed throughout the project to ensure their commitment*, B = 0.146 (t = 1.590, p = 0.114); and *executives were briefed on the process's scope, objectives, and approaches to obtain their commitment,* B = -0.066 (t = -0.711, p = 0.478).

These results indicate that when *senior management's key planning issues were determined at the beginning*, it had a positive impact on SISP success. In contrast: *a top executive championed SISP process; senior management provided feedback and guidance throughout the process; senior management were briefed throughout the project to ensure their commitment;* and *executives were briefed on the process's scope, objectives, and approaches to obtain their commitment*, all had no impact on the success of SISP.

5.7.5 Relationship between Top Management Support and SISP Success

Table 5.71 shows that the eight independent variables, of the top management commitment, account for 15.90% of the variation in SISP success ($R^2 = 0.202$, adjusted $R^2 = 0.159$).

Table 5.71: Model Summary [b] (Top Management Support)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.450(a)	.202	.159	.594	1750

a Predictors: (Constant), top management believes IS plays an important role in the bank's ability to compete, low turnover of key people throughout the project, organisational support, IS budget allocation is sufficient, high credibility of leaders and sponsors, close management control to resolve conflict among different organisational subunits, reasonable expectations from the management, allocation of sufficient resources.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test, presented in Table 5.72, will now be inspected.

Table 5.72: ANOVA [b] (Top Management Support)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.233	8	1.654	4.690	.000(a)
	Residual	52.194	148	.353		
	Total	65.427	156			

a Predictors: (Constant), top management believes IS plays an important role in the bank's ability to compete, low turnover of key people throughout the project, organisational support, IS budget allocation is sufficient, high credibility of leaders and sponsors, close management control to resolve conflict among different organisational subunits, reasonable expectations from the management, allocation of sufficient resources.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 4.690 and was significant (F – value = 4.690, $P = 0.000$). Since the observed significance level was less than 0.10, the results indicate that the model is adequate and the eight variables of top management support of SISP together influence SISP success.

To further test whether each of these variables affects SISP success, the coefficient of each, its t-statistic and its observed significance level (presented in Table 5.73), will be inspected.

Table 5.73: Results of Regression Coefficients [a] (Top Management Support)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.783	.369		4.834	.000		
	Allocation of sufficient resources.	-.031	.115	-.038	-.267	.790	.271	3.691
	Organisational support.	-.059	.099	-.066	-.593	.554	.439	2.279
	Reasonable expectations from the management.	.109	.097	.120	1.125	.262	.475	2.105
	High credibility of leaders and sponsors.	.301	.093	.342	3.218	.002	.476	2.101
	Low turnover of key people throughout the project.	.028	.081	.034	.346	.730	.551	1.816
	Close management control to resolve conflict among different organisational subunits.	-.030	.089	-.036	-.332	.740	.453	2.208
	IS budget allocation is sufficient.	.062	.061	.086	1.030	.305	.774	1.293
	Top management believes IS plays an important role in the bank's ability to compete.	.091	.076	.106	1.204	.231	.696	1.437

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The above results indicate that *high credibility of leaders and sponsors,* B = 0.301, (t = 3.218, p = 0.002) significantly affects SISP success in the banking sector. However, *allocation of sufficient resources,* B= -0.031 (t = -0.267, p = 0.790); *organisational support,* B = -0.059 (t = -0.593, p = 0.554); *reasonable expectations from the management,* B = 0.109(t = 1.125, p = 0.262); *low turnover of key people throughout the project,* B = 0.028 (t = 0.346, p = 0.730); *close management control to resolve conflict among different organisational subunits,* B = -0.030 (t = -0.332, p = 0.740); *IS budget allocation is sufficient,* B = 0.062 (t = 1.030, p = 0.305); and *top management believes IS plays an important role in the bank's ability to compete,* B = -0.091 (t = 1.204, p = 0.231) do not significantly affect SISP success in the banking sector because of their respective coefficients.

These results indicate that the *high credibility of leaders and sponsors* had a positive impact upon SISP success. Although, in contrast: *allocation of sufficient resources; organisational support; reasonable expectations from the management; low turnover of key people throughout the project; close management control to resolve conflict among different organisational subunits; IS budget allocation is sufficient;* and *top management believes IS plays an important role in the bank's ability to compete,* had no impact upon SISP success.

5.8 Relationship between External Consultant Functions and SISP Success

Table 5.74 shows that the nine independent variables of the external consultant roles account for 19.00% of the variation in SISP success ($R^2 = 0.237$, adjusted $R^2 = 0.190$).

Table 5.74: Model Summary [b] (Consultant Functions)

Model	R	R [2]	Adjusted R [2]	Std. Error of Estimate	Durbin-Watson
1	.487(a)	.237	.190	.583	1.910

a Predictors: (Constant), external consultant was in an advisory role and assisted with decisions about IS only when invited, the external consultant made many of the major decisions about information systems in my bank, external consultants transferred technology to our employees, management at my bank viewed the external consultant as the leader of the information systems initiative, the external consultant provided adequate support to information systems in my bank, external consultant trained our employees on the methods used, external consultant explained the importance of the study, external consultant worked with our employees as a team member, external consultant used qualified and experienced people.

To test the regression model adequacy, the results of the ANOVA test (presented in Table 5.75) will now be inspected. The table shows that the ratio of the two mean squares (F) was 5.067 and was significant (F – value = 5.067, *P* = 0.000).

Since the observed significance level was less than 0.10, the results indicate that the model is adequate and that the nine variables of the external consultant functions together influence SISP success.

Table 5.75: ANOVA [b] (Consultant Functions)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.492	9	1.721	5.067	.000(a)
	Residual	49.935	147	.340		
	Total	65.427	156			

a Predictors: (Constant), external consultant was in an advisory role and assisted with decisions about IS only when invited, external consultant made many of the major decisions about information systems in my bank, external consultants transferred technology to our employees, management at my bank viewed external consultant as the leader of the information systems initiative, external consultant provided adequate support to information systems in my bank, external consultant trained our employees on the methods used, external consultant explained the importance of the study, external consultant worked with our employees as a team member, external consultant used qualified and experienced people.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To further test whether each of these variables affects the success of SISP, the coefficient of each, its t-statistic and its observed significance level (presented in Table 5.76), will be inspected.

The results from Table 5.76 indicate the following: *external consultant transferred technology to our employees,* B = 0.390 (t = 4.719, p = 0.000)*; external consultant made many of the major decisions about information systems in my bank,* B = -0.118 (t = -1.722, p = 0.087); and the *external consultant was in an advisory role and assisted with decisions about IS only when invited,* B = -0.282, (t = -3.578, p = 0.000); consequently, these elements significantly affect SISP success in the banking sector.

Table 5.76: Results of Regression Coefficients [a] (Consultant Functions)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.534	.074		47.657	.000		
	External consultant explained the importance of the study.	.013	.086	.039	.150	.881	.077	12.987
	External consultant trained our employees on the methods used.	-.007	.100	-.018	-.066	.947	.069	14.438
	External consultant worked with our employees as a team member.	.026	.098	.077	.271	.787	.064	15.617
	External consultant transferred technology to our employees.	.390	.083	1.052	4.719	.000	.104	9.576
	External consultant used qualified and experienced people.	-.016	.121	-.044	-.128	.898	.045	22.279
	External consultant provided adequate support to information systems in my bank.	-.008	.104	-.021	-.073	.942	.065	15.426
	Management at my bank viewed the external consultant as the leader of the information systems initiative.	.050	.081	.123	.618	.537	.131	7.611
	External consultant made many of the major decisions about information systems in my bank.	-.118	.068	-.285	-1.722	.087	.190	5.265
	External consultant was in an advisory role and assisted with decisions about IS only when invited.	-.282	.079	-.788	-3.578	.000	.107	9.340

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

However, the following elements do not significantly affect the success of SISP in the banking sector, because of their respective coefficients: *external consultant explained the importance of the study*, B = -0.013 (t = -0.150, p = 0.881); *external consultant trained our employees on the methods used*, B = -0.007 (t = -0.066, p = 0.947); *external consultant worked with our employees as a team member*, B = 0.026 (t = 0.271, p = 0.787); *external consultant used qualified and experienced people*, B = -0.016 (t = -0.126, p = 0.898); *external consultant provided adequate support to information systems in my bank*, B = -0.008 (t = -0.073, p = 0.942); and *management at my bank*

viewed external consultant as the leader of the information systems initiative, B = 0.050 (t = 0.618, p = 0.537).

These findings indicate that when the *external consultant transferred technology to our employees* it had a positive impact upon SISP success. In contrast, when the *external consultant made many of the major decisions about information systems in my bank* and when the *external consultant was in an advisory role and assisted with decisions about IS only when invited* it had negative impacts on SISP success.

However, the following elements had no impact on SISP success: *external consultants explained the importance of the study; external consultant trained our employees on the methods used; external consultant worked with our employees as a team member; external consultant used qualified and experienced people; external consultant provided adequate support to information systems in my bank;* and *management at my bank viewed the external consultant as the leader of the information systems initiative*.

These findings help to answer the fourth research sub-question (RQ4), 'What are the main functions of the external consultant's impact on the success of SISP in the banking sector?' These findings will be discussed in more detail within the research discussions of Chapter 7.

5.9 SISP External Contextual Factors in Banking Sector

The main external contextual factors of SISP in the banking sector include: national culture, government and public organisations, international institutions, competitors and partners. Specific elements of these external environments might have an effect on the

success of SISP. To identify these effects, and in order to answer the fifth research sub-question (RQ5), 'What are the main elements, in terms of the external contextual factors, of SISP which influence its success in the banking sector?', the relationships between these elements and SISP success needs to be examined; the results of which are introduced as follows.

5.9.1 Relationship between National Culture and SISP Success

Table 5.77 shows that the three independent variables of national culture account for 02.90% of the variation in SISP success ($R^2 = 0.048$, adjusted $R^2 = 0.029$).

Table 5.77: Model Summary [b] (National Culture)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.219(a)	.048	.029	.638	1.640

a Predictors: (Constant), male/female separation in work environment, language, religion.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test (presented in Table 5.78) will be inspected.

Table 5.78: ANOVA [b] (National Culture)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.144	3	1.048	2.574	.056(a)
	Residual	62.283	153	.407		
	Total	65.427	156			

a Predictors: (Constant), male/female separation in work environment, language, religion
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 2.574 and was significant (F – value = 2.574, $P = 0.056$). The observed significance level was less than

0.10 and the results therefore indicate that the model is adequate and that the three variables of national culture together influence SISP success.

To further test whether each of these variables affects SISP success, the coefficient of each, its t-statistic and its observed significance level, presented in Table 5.79, will be inspected.

Table 5.79: Results of Regression Coefficients [a] (National Culture)

Model		Unstandardised Coefficients		Standardised Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.969	.135		29.398	.000		
	Religion.	-.058	.051	-.130	-1.149	.252	.487	2.052
	Language.	-.051	.054	-.093	-.954	.341	.660	1.516
	Male/female separation in work environment.	-.016	.052	-.031	-.306	.760	.586	1.707

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results from Table 5.24 indicate that: *religion*, B = -.058 (t = -1.149, p = 0.252*)*; *language*, B =-0.051 (t= -0.954, p = 0.341); and *male/female separation in work environment*, B = -0.016 (t = -0.306, p = 0.760), do not significantly affect SISP success in the banking sector because of their respective coefficients.

Thus, this indicates that *religion*, *language*, and *male/female separation in work environment (segregation)* have no impact on the success of SISP.

5.9.2 Relationship between Government and Public Organisations and SISP Success

The four independent variables of the government and public organisations account for 11.00% of the variation in SISP success (R^2 = 0.132, adjusted R^2 = 0.110). (see Table 5.80).

Table 5.80: Model Summary [b] (Government and Public Organisations)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.364(a)	.132	.110	.611	1.774

a Predictors: (Constant), Water Agency, Saudi Arabian Monetary Agency (SAMA), Ministry of Finance, Saudi Electric
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test (presented in Table 5.81) will be inspected.

Table 5.81: ANOVA [b] (Government and Public Organisations)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.664	4	2.166	5.800	.000(a)
	Residual	56.763	152	.373		
	Total	65.427	156			

a Predictors: (Constant), Water Agency, Saudi Arabian Monetary Agency (SAMA), Ministry of Finance, Saudi Electric
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 2.574 and was significant (F – value = 2.574, *P* = 0.056). Since the observed significance level was less than 0.10, the results indicate that the model is adequate and that the four variables of the government and public organisations together influence SISP success.

To further test whether each of the variables affects SISP success, the coefficient of each, its t-statistic and its observed significance level (presented in Table 5.82) will be inspected.

The results from Table 5.82 indicate that the: *Ministry of Finance,* B = -0.088 (t = -1.788, p = 0.076) and the *Saudi Arabian Monetary Agency (SAMA),* B = 0.286 (t =

4.463, p = 0.000) significantly affect the success of SISP in the banking sector. However, in contrast: *Saudi Electricity,* B = -0.064 (t = 0.979, p = 0.329), and the *Water Agency,* B = -0.100 (t = -1.296, p = 0.197) do not significantly affect SISP success in the banking sector because of their respective coefficients.

Table 5.82: Results of Regression Coefficients [a] (Govt. and Public Organisations)

Model	Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	2.720	.246		11.034	.000		
Ministry of Finance.	-.088	.049	-.165	-1.788	.076	.670	1.494
Saudi Arabian Monetary Agency (SAMA).	.286	.064	.388	4.463	.000	.756	1.323
Saudi Electricity.	.064	.065	.123	.979	.329	.361	2.768
Water Agency.	-.100	.077	-.164	-1.295	.197	.355	2.820

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

These findings indicate that the *Saudi Arabian Monetary Agency (SAMA)* had a positive impact on SISP success; whereas, the *Ministry of Finance* had a negative impact, and *Saudi Electricity* and the *Water Agency* had no impact on the success of SISP.

5.9.3 Relationship between International Institutions and SISP Success

Table 5.83 shows that the five independent variables that focus on the international institutions account for 16.20% of the variation in SISP success (R^2 = 0.189, adjusted R^2 = 0.162).

Table 5.83: Model Summary [b] (International Institutions)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.435(a)	.189	.162	.593	2.031

a Predictors: (Constant), Gulf Cooperative Council (GCC), Bank for International Settlements (BIS), Society for Worldwide Interbank Financial Telecommunication (SWIFT), The World Bank, International Monetary Fund (IMF).
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test will be inspected (see Table 5.84).

Table 5.84: ANOVA [b] (International Institutions)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	12.354	5	2.471	7.030	.000(a)
	Residual	53.073	151	.351		
	Total	65.427	156			

a Predictors: (Constant), Gulf Cooperative Council (GCC), Bank for International Settlements (BIS), Society for Worldwide Interbank Financial Telecommunication (SWIFT), The World Bank, International Monetary Fund (IMF).
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 7.030 and was significant (F – value = 7.030, $P = 0.000$). Since the observed significance level was less than 0.10, the results indicate that the model is adequate and that the five variables of international institutions together influence SISP success.

To further test whether each of these variables affects the success of SISP, the coefficient of each, its t-statistic and its observed significance level will be reviewed, as presented in Table 5.85.

Table 5.85: Results of Regression Coefficients [a] (International Institutions)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.224	.172		18.721	.000		
	International Monetary Fund (IMF).	.208	.103	.372	2.031	.044	.160	6.239
	The World Bank.	-.444	.104	-.763	-4.255	.000	.167	5.981
	Society for Worldwide Interbank Financial Telecommunication (SWIFT).	.176	.049	.320	3.558	.001	.664	1.506
	Bank for International Settlements (BIS).	.010	.052	.016	.184	.854	.702	1.424
	Gulf Cooperative Council (GCC).	.130	.063	.221	2.051	.042	.464	2.156

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results from Table 5.85 indicate that the following international institutions significantly affect SISP success in the banking sector: *International Monetary Fund (IMF),* B = 0.208 (t = 2.031, p = 0.044); *The World Bank,* B = -0.444, (t = -4.255, p = 0.000); *Society for Worldwide Interbank Financial Telecommunication (SWIFT),* B = 0.176 (t = 3.558, p = 0.001); and the *Gulf Cooperative Council (GCC),* B = 0.130, (t = 2.051, p = 0.042).

However, the *Bank for International Settlements (BIS),* B = 0.010, (t = 0.184, p = 0.854) did not significantly affect SISP success in the banking sector since its partial coefficient did not contribute significantly to the model.

These results indicate that the *International Monetary Fund (IMF), Society for Worldwide Interbank Financial Telecommunication (SWIFT)* and *Gulf Cooperative Council (GCC)* all positively impact on the success of SISP, but *The World Bank* had a negative impact on its success. In addition, the *Bank for International Settlements (BIS)* had no impact on SISP success.

5.9.4 Relationship between Competitors and SISP Success

The four independent variables which focus on the competitors account for 08.20% of the variation in SISP success ($R^2 = 0.105$, adjusted $R^2 = 0.082$) (see Table 5.86).

Table 5.86: Model Summary [b] (Competitors)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.325(a)	.105	.082	.621	1.744

a Predictors: (Constant), foreign banks, insurance companies, national banks, real estate offices.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test, presented in Table 5.87 will be inspected.

Table 5.87: ANOVA [b] (Competitors)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.897	4	1.724	4.478	.002(a)
	Residual	58.530	152	.385		
	Total	65.427	156			

a Predictors: (Constant), foreign banks, insurance companies, national banks, real estates offices.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 4.478 and was significant (F – value = 4.478, *P* = 0.002). Since the observed significance level was less than 0.10, the results indicate that the model is adequate and that the four variables, focusing on the competitors together influence SISP success.

To further test whether each of these variables affects SISP success, the coefficient of each, its t-statistic and its observed significance level (presented in Table 5.88) will now be inspected.

Table 5.88: Results of Regression Coefficients [a] (Competitors)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.073	.165		18.637	.000		
	Insurance Companies.	.027	.069	.041	.384	.702	.512	1.953
	Real Estate Offices.	-.091	.084	-.113	-1.086	.279	.542	1.843
	National Banks.	.052	.053	.099	.981	.328	.579	1.726
	Foreign Banks	.160	.055	.281	2.936	.004	.641	1.560

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results from Table 5.88 indicate that the *foreign banks*, B = 0.160, (t = 2.936, p = 0.004), significantly affect SISP success in the banking sector. However, *insurance companies*, B = 0.027, (t = 0.384, p = 0.702), *real estate offices*, B = -0.091, (t = -

0.086, p = 0.279) and the *national banks*, B = 0.052, (t = 0.981, p = 0.328) did not significantly affect SISP success in the banking sector, this was determined because their partial coefficients did not contribute significantly to the model.

Thus, indicating that, the *foreign banks* had a positive impact on the success of SISP; whereas, the *insurance companies*, *real estate offices*, and the *national banks* had no impact upon SISP success.

5.9.5 Relationship between Partners and SISP Success

Table 5.89 shows that the four independent variables associated with the partners, account for 04.00% of the variation in SISP success ($R^2 = 0.065$, adjusted $R^2 = 0.040$).

Table 5.89: Model Summary [b] (Partners)

Model	R	R [2]	Adjusted R [2]	Std. Error of Estimate	Durbin-Watson
1	.254(a)	.065	.040	.635	1.748

a Predictors: (Constant), American Express (AMEX), Central Bank, VISA, Master Card (MC).
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test, presented in Table 5.90, will now be inspected.

Table 5.90: ANOVA [b] (Partners)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.231	4	1.058	2.627	.037(a)
	Residual	61.196	152	.403		
	Total	65.427	156			

a Predictors: (Constant), American Express (AMEX), Central Bank, VISA, Master Card (MC).
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 2.627 and was significant (F – value = 2.627, *P* = 0.037) because the observed significance level was less than 0.10. The results therefore indicate that the model is adequate and that the four variables, associated with the partners, together influence SISP success.

To further test whether each of the variables affects SISP success, the coefficient of each, its t-statistic and its observed significance level (presented in Table 5.91), will be reviewed.

Table 5.91: Results of Regression Coefficients [a] (Partners)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.242	.143		22.609	.000		
	Central Bank.	.070	.050	.146	1.396	.165	.564	1.774
	VISA.	.032	.178	.063	.182	.856	.052	19.299
	Master Card (MC).	-.025	.194	-.048	-.127	.899	.044	22.890
	American Express (AMEX).	.078	.053	.151	1.476	.142	.589	1.699

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results from Table 5.91 indicate that none of the following partners significantly affects SISP success in the banking sector, since their partial coefficients do not contribute significantly to the model: *Central Bank,* B = 0.070 (t = 1.396, p = 0.564), *VISA,* B = -0.032 (t = -0.182, p = 0.856), *Master Card (MC),* B = -0.025, (t = -0.127, p = 0.899), and *American Express (AMEX),* B = 0.078, (t = 1.476, p = 0.142). Thus, indicating that the *Central Bank, VISA, Master Card (MC)* and *American Express (AMEX)* all had no impact on the success of SISP.

5.10 SISP Success Measurements in Banking Sector

SISP success in the banking sector can be measured by considering the external (including customers) and the internal (including management) elements. In order to answer the sixth research sub-question (RQ6), 'Which internal and external measurements of SISP impact on its success when utilised in the banking sector?', the relationship between these measurements and SISP success will be examined.

5.10.1 Relationship between External Measurements and SISP Success

Table 5.92 shows that the three independent variables, connected with the external measurements, account for 10.80% of the variation in SISP success (R^2 = 12.50, adjusted R^2 = 10.80).

Table 5.92: Model Summary [b] (External Measurements)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.354(a)	.125	.108	.612	1.709

a Predictors: (Constant), improving the security, cost reduction of the services, improving the services quality to the public.

To test the regression model adequacy, the results of the ANOVA test (presented in Table 5.93) will be inspected.

Table 5.93: ANOVA [b] (External Measurements)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.210	3	2.737	7.318	.000(a)
	Residual	57.217	153	.374		
	Total	65.427	156			

a Predictors: (Constant), improving the security, cost reduction of the services, improving the services quality to the public.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 7.318 and was therefore significant (F – value = 7.318, *P* = 0.000) because the observed significance level was less than 0.10. The results indicate that the model is adequate and that the three variables, concerned with the external measurements, together influence SISP success.

To further test these variables and their effects on SISP success, the coefficient of each, its t-statistic and its observed significance level (presented in Table 5.94), will be inspected.

Table 5.94: Results of Regression Coefficients [a] (External Measurements)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.855	.237		12.027	.000		
	Cost reduction of the services.	-.102	.055	-.163	-1.841	.068	.725	1.380
	Improving the services quality to the public.	.241	.073	.359	3.324	.001	.491	2.039
	Improving the security.	.053	.071	.075	.750	.455	.573	1.745

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results from Table 5.94 indicate that *improving the services quality to the public*, B = 0.241, (t = 3.324, p = 0.001), and *cost reduction of the services*, B = -0.102 (t = -1.841, p = 0.068) significantly affect SISP success in the banking sector. However, *improving the security*, B = 0.053, (t = 0.750, p = 0.455) did not significantly affect SISP success in the banking sector, since its partial coefficient did not contribute significantly to the model.

Therefore, this indicates that *improving the services quality to the public* had a positive impact upon SISP success; whereas, *cost reduction of the services* had a negative impact and *improving the security* had no impact on SISP success.

5.10.2 Relationship between Internal Measurements and SISP Success

Table 5.95 shows that the three independent variables associated with the internal measurements account for 10.80% of the variation in SISP success (R^2 = 12.50, adjusted R^2 = 10.80).

Table 5.95: Model Summary [b] (Internal Measurements)

Model	R	R [2]	Adjusted R [2]	Std. Error of Estimate	Durbin-Watson
1	.391(a)	.153	.136	.602	1.829

a Predictors: (Constant), increasing the profit, cost reduction, improving market share.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test (presented in Table 5.96) will be inspected.

Table 5.96: ANOVA [b] (Internal Measurements)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.981	3	3.327	9.180	.000(a)
	Residual	55.446	153	.362		
	Total	65.427	156			

a Predictors: (Constant), increasing profit, cost reduction, improving market share.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table indicates that the ratio of the two mean squares (F) was 9.180 and was significant (F – value = 9.180, *P* = 0.000). Since the observed significance level was less than 0.10, the results indicate that the model is adequate and that the three variables, of the internal measurements, together influence SISP success.

To further test whether each of the variables affects SISP success, the coefficient of each, its t-statistic and its observed significance level, as presented in Table 5.97, will be inspected.

Table 5.97: Results of Regression Coefficients [a] (Internal Measurements)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.202	.184		17.424	.000		
	Cost reduction.	-.031	.053	-.047	-.581	.562	.836	1.196
	Improving market share.	.229	.053	.470	4.289	.000	.462	2.165
	Increasing profit.	-.049	.054	-.097	-.899	.370	.471	2.125

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results, highlighted in Table 5.97, indicate that *improving market share,* B = 0.229 (t = 4.289, p = 0.000) significantly affects SISP success in the banking sector. However, *cost reduction,* B = -0.031 (t = -0.581, p = 0.562) and *increasing profit,* B = -0.049 (t = -0.899, p = 0.370) did not significantly affect SISP success since their partial coefficients did not contribute significantly to the model.

Thus, indicating that *improving market share* positively impacted on SISP success. On the other hand, *cost reduction* and *increasing profit* had no impact on SISP success.

5.11 SISP Key Stakeholders' Influences in Banking Sector

As mentioned in previous chapters, the executives, business user directors and managers, IT directors and managers, and external consultants are the key stakeholders of SISP in the banking sector. Each stakeholder has his/her own role in SISP, including: initiating, leading, involving, spending time, and exerting power, which might have a direct influence on SISP success. In order to explore which elements of these roles have an impact, the relationship between them and SISP success will now be examined.

5.11.1 Relationship between Executives' Roles and SISP Success

Table 5.98 highlights that the four independent variables which focus on the executives' roles, account for 22% of the variation in SISP success (R^2 = 24.00, adjusted R^2 = 22.00).

Table 5.98: Model Summary [b] (Executives' Roles)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.489(a)	.240	.220	.572	2.058

a Predictors: (Constant), executives (exert influence and power), executives (lead) executives (involve), executives (initiate).
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test (presented in Table 5.99) will be inspected.

Table 5.99: ANOVA [b] (Executives' Roles)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	15.673	4	3.918	11.971	.000(a)
	Residual	49.753	152	.327		
	Total	65.427	156			

a Predictors: (Constant), executives (exert influence and power), executives (lead), executives (involve), executives (initiate).
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 11.971 and was significant (F – value = 11.971, P = 0.000). Since the observed significance level was less than 0.10, the results indicate that the model is adequate and that the four variables which focus on the executives' roles together influence SISP success. To further test whether each of the variables affects SISP success, the coefficient of each, its t-statistic and its observed significance level, presented in Table 5.100, will be inspected.

Table 5.100: Results of Regression Coefficients [a] (Executives' Roles)

Model		Unstandardised Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.629	.191		13.757	.000		
	Executives (initiate).	.212	.058	.353	3.630	.000	.529	1.892
	Executives (lead).	-.054	.049	-.098	-1.104	.271	.635	1.574
	Executives (involve).	.183	.062	.285	2.950	.004	.537	1.863
	Executives (exert influence and power).	-.042	.045	-.075	-.939	.349	.775	1.290

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results highlighted in Table 5.100 indicate that *executives (initiate),* B = 0.212 (t = 3.630, p = 0.000), and *executives (involve),* B = 0.183 (t = 2.950, p = 0.004) significantly affected SISP success in the banking sector. However, *executives (lead),* B = - 0.054 (t = -1.104, p = 0.271), and *executives (exert influence and power),* B = -0.042 (t = -0.939, p = 0.349) did not significantly affect SISP success in the banking sector, since their partial coefficients did not contribute significantly to the model.

Thus, the findings indicate that *executives (initiate)* and *executives (involve)* had positive impacts on SISP success. Whereas, *executives (lead)* and *executives (exert influence and power)* had no impact on SISP success.

5.11.2 Relationship between Business User Directors' and Managers' Roles, and SISP Success

Table 5.101 highlights that the four independent variables of the business user directors' and managers' roles account for 19.20% of the variation in SISP success (R^2 = 21.80, adjusted R^2 = 19.20).

Table 5.101: Model Summary [b] (Business User Directors' and Managers' Roles)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.466(a)	.218	.192	.582	1.782

a Predictors: (Constant), business user's directors and managers (exert influence and power), business user's directors and managers (initiate), business user's directors and managers (spend time), business user's directors and managers (involve), business user's directors and managers (lead).

To test the regression model adequacy, the results of the ANOVA test, presented in Table 5.102, will now be inspected.

Table 5.102: ANOVA [b] (Business User Directors' and Managers' Roles)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.238	5	2.848	8.400	.000(a)
	Residual	51.188	151	.339		
	Total	65.427	156			

a Predictors: (Constant), business user directors and managers (exert influence and power), business user directors and managers (initiate), business user directors and managers (spend time), business user directors and managers (involve), business user directors and managers (lead).
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 8.400 and was significant (F – value = 8.400, $P = 0.000$). Since the observed significance level was less than 0.10, the results indicate that the model is adequate and that the five variables, of business user directors' and managers' roles, together influence SISP success.

To further test whether each of the variables affected SISP success, the coefficient of each, its t-statistic and its observed significance level, presented in Table 5.103, will be inspected. The results indicate that *business user directors and managers (initiate),* B = 0.240 (t = 3.779, p = 0.000), and *business user directors and managers (involve),* B = 0.197, (t = 2.871, p = 0.005) all significantly affect SISP success in the banking sector.

Table 5.103: Results of Regression Coefficients [a] (Business User Directors' and Managers' Roles)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.143	.260		8.229	.000		
	Business user directors and managers (initiate).	.240	.063	.334	3.779	.000	.665	1.503
	Business user directors and managers (lead).	.023	.060	.036	.379	.706	.573	1.745
	Business user directors and managers (involve).	.197	.069	.241	2.871	.005	.738	1.356
	Business user directors and managers (spend time).	-.072	.051	-.115	-1.413	.160	.780	1.281
	Business user directors and managers (exert influence and power).	.023	.049	.037	.471	.638	.822	1.216

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

However, the following elements did not significantly affect SISP success in the banking sector, since their partial coefficients did not contribute significantly to the model, they were: *business user directors and managers (lead),* B = -0.023 (t = 0.379, p = 0.706), *business user directors and managers (spend time),* B = -0.072 (t = -1.413, p = 0.160), and *business user directors and managers (exert influence and power),* B = 0.023 (t = 0.471, p = 0.638).

Thus, indicating that *business user directors and managers (initiate),* and *business user directors and managers (involve)* both positively impacted on the success of SISP. Conversely, *business user directors and managers (lead), business user directors and managers (spend time),* and *business user directors and managers (exert influence and power)* had no impact on SISP success.

5.11.3 Relationship between IT Directors' and Managers' Roles and SISP Success

Table 5.104 shows that the four independent variables, of IT directors and managers, account for 15% of the variation in SISP success (R^2 = 17.70, adjusted R^2 = 15.00).

Table 5.104: Model Summary [b] (IT Directors' and Managers' Roles)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.421(a)	.177	.150	.597	1.748

a Predictors: (Constant), IT directors and managers (exert influence and power), IT directors and managers (initiate), IT directors and managers (spend time), IT directors and managers (lead), IT directors and managers (involve).

To test the regression model adequacy, the results of the ANOVA test, presented in Table 5.105, will be inspected.

Table 5.105: ANOVA [b] (IT Directors' and Managers' Roles)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.569	5	2.314	6.487	.000(a)
	Residual	53.857	151	.357		
	Total	65.427	156			

a Predictors: (Constant), IT directors and managers (exert influence and power), IT directors and managers (initiate), IT directors and managers (spend time), IT directors and managers (lead), IT directors and managers (involve).
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 6.487, this was significant (F – value = 6.487, $P = 0.000$) since the observed significance level was less than 0.10. The results indicate that the model is adequate and that the five variables concerning the IT Directors' and Managers' roles together influence SISP success.

To further test whether each of the variables affect SISP success, the coefficient of each, its t-statistic and its observed significance level, presented in Table 5.106, will be inspected.

The results highlighted in Table 5.106 indicate that the following elements significantly affected SISP success in the banking sector: *IT directors and managers (lead),* B = 0.240 (t = 3.779, p = 0.000), and *IT directors and managers (spend time),* B = 0.197 (t = 2.871, p = 0.005) and *IT directors and managers (exert influence and power),* B = -

0.253 (t = -4.119, p = 0.000). However, in contrast, *IT directors and managers (initiate),* B = - 0.022 (t = 0.293, p = 0.770), and *IT directors and managers (involve),* B = -0.011 (t = -0.130, p = 0.896) had no significant effect on the success of SISP in the banking sector, since their partial coefficients did not contribute significantly to the model.

Table 5.106: Results of Regression Coefficients [a] (IT Directors' and Managers' Roles)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.920	.341		8.556	.000		
	IT directors and managers (initiate).	.022	.076	.028	.293	.770	.612	1.635
	IT directors and managers (lead).	.259	.088	.281	2.944	.004	.600	1.666
	IT directors and managers (involve).	-.011	.083	-.013	-.130	.896	.576	1.737
	IT directors and managers (spend time)	.168	.053	.284	3.180	.002	.684	1.461
	IT directors and managers (exert influence and power)	-.253	.061	-.391	-4.119	.000	.606	1.650

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The findings indicate that *IT directors and managers (lead) and IT directors and managers (spend time)* had positive impacts on SISP success; in contrast, *IT directors and managers (exert influence and power)* had a negative impact on the success of SISP; whereas, *IT directors and managers (initiate)* and *IT directors and managers (involve)* had no impact on SISP success.

5.11.4 Relationship between Consultants' Roles and SISP Success

Table 5.107 highlights that the four independent variables, concerning consultants, accounted for 12.20% of the variation in SISP success (R^2 = 15.00, adjusted R^2 = 12.20).

Table 5.107: Model Summary [b] (Consultants' Roles)

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate	Durbin-Watson
1	.388(a)	.150	.122	.607	1.999

a Predictors: (Constant), consultants (exert influence and power), consultants (lead), consultants (spend time), consultants (initiate), consultants (involve).
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test (presented in Table 5.108) will be inspected.

Table 5.108: ANOVA [b] (Consultants' Roles)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	9.824	5	1.965	5.336	.000(a)
	Residual	55.602	151	.368		
	Total	65.427	156			

a Predictors: (Constant), consultants (exert influence and power), consultants (lead), consultants (spend time), consultants (initiate), consultants (involve).
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 5.336 and was significant (F – value = 5.336, $P = 0.000$) since the observed significance level was less than 0.10. The results therefore indicate that the model is adequate and that the five variables of consultants' roles together influence SISP success.

To further test whether each of the variables affects SISP success, the coefficient of each, its t-statistic and its observed significance level, will be inspected (see Table 5.109).

Table 5.109: Results of Regression Coefficients [a] (Consultants' Roles)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.703	.127		29.235	.000		
	Consultants (initiate).	.165	.055	.351	3.007	.003	.413	2.420
	Consultants (lead).	-.264	.064	-.505	-4.095	.000	.370	2.703
	Consultants (involve).	.184	.061	.385	3.044	.003	.352	2.842
	Consultants (spend time).	.036	.052	.078	.679	.498	.424	2.360
	Consultants (exert influence and power).	-.171	.059	-.360	-2.927	.004	.371	2.692

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results from Table 5.54 indicate that the following elements: *consultants (initiate)* B = 0.165 (t = 3.007, p = 0.003); *consultants (lead)* B = -0.264, (t = -4.095, p = 0.000); *consultants (involve)* B = 0.184 (t = 3.044, p = 0.003); and *consultants (exert influence and power)* B = -0.171 (t = -2.927, p = 0.004), all significantly affect SISP success in the banking sector. However, *consultants (spend time)* B = -0.036 (t = 0.679, p = 0.498) did not significantly appear to affect SISP success in the banking sector, since its partial coefficients did not contribute significantly to the model.

Thus, indicating that *consultants (initiate)* and *consultants (involve)* positively impact upon SISP success, and *consultants (lead) and consultants (exert influence and power)* negatively impact upon its success; on the other hand, *consultants (spend time)* had no impact on SISP success.

The findings highlighted in sections 5.11.1 to 5.11.4 provide information which helps in answering the seventh research sub-question (RQ7), 'Which key stakeholder roles (initiating, leading, involving, spending time, and exerting power) impact on the success of SISP in the banking sector?' These research findings will be discussed in detail in the discussions in Chapter 7.

5.12 Relationship between Triggers in the Banking Sector and SISP Success

Table 5.110 shows that the seven independent variables, of SISP triggers, account for 18.40% of the variation in SISP success (R^2 = 22.00, adjusted R^2 = 18.40).

Table 5.110: Model Summary [b] (Triggers)

Model	R	R^2	Adjusted R^2	Std. Error of Estimate	Durbin-Watson
1	.469(a)	.220	.184	.585	1.651

a Predictors: (Constant), failure in the last project/s, new executive/s has been appointed, cost pressures, changes in technology, need to improve IS performance, changes in organisation structure, changes in corporate business strategy.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

To test the regression model adequacy, the results of the ANOVA test, presented in Table 5.111, will be inspected.

Table 5.111: ANOVA [b] (Triggers)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	14.409	7	2.058	6.012	.000(a)
	Residual	51.017	149	.342		
	Total	65.427	156			

a Predictors: (Constant), failure in the last project/s, new executive/s has been appointed, cost pressures, changes in technology, need to improve IS performance, changes in organisation structure, changes in corporate business strategy.
b Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The table shows that the ratio of the two mean squares (F) was 6.012 and was significant (F – value = 6.012, *P* = 0.000). Since the observed significance level was less than 0.10, the results indicate that the model is adequate and that the seven variables of SISP triggers together influence SISP success.

To further test whether each of the variables affects SISP success, the coefficient of each, its t-statistic and its observed significance level, shown in Table 5.112, will be inspected.

Table 5.112: Results of Regression Coefficients [a] (Triggers)

Model		Unstandardised Coefficients		Standardised Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	2.993	.226		13.222	.000		
	New executive/s been appointed.	.026	.052	.043	.501	.617	.727	1.375
	Changes in technology.	-.146	.069	-.222	-2.110	.037	.472	2.120
	Changes in organisation structure.	.060	.066	.092	.910	.365	.507	1.972
	Cost pressures.	-.170	.062	-.266	-2.721	.007	.546	1.831
	Need to improve IS performance.	.223	.063	.349	3.540	.001	.539	1.856
	Changes in corporate business strategy.	.279	.064	.445	4.361	.000	.503	1.988
	Failure in last project/s.	-.163	.042	-.332	-3.926	.000	.732	1.367

a Dependent Variable: Overall, how successful has Strategic Information Systems Planning been in your bank?

The results presented in Table 5.112 indicate that: *changes in technology,* B = -0.146 (t = -2.110, p = 0.037); *cost pressures,* B = -0.170 (t = -2.721, p = 0.007); *need to improve IS performance,* B = 0.223 (t = 3.540, p = 0.001); *changes in corporate business strategy* B = 0.279 (t = 4.361, p = 0.000); and *failure in the last project/s*, B = -0.163, (t = -3.926, p = 0.000) all significantly affected the success of SISP in the banking sector. However, *new executive/s has been appointed*, B = -0.026 (t = 0.501, p = 0.617), and *changes in organisation structure*, B = -0.060 (t = 0.910, p = 0.365) did not significantly affect SISP success in the banking sector since their partial coefficients did not contribute significantly to the model.

Therefore, indicating that *need to improve IS performance,* and *changes in corporate business strategy* had positive impacts on SISP success; conversely, *changes in technology, cost pressures,* and *failure in the last project/s* had negative impacts. Whereas, *new executive/s has been appointed* and *changes in organisation structure* had no impact on SISP success.

These findings help in providing an answer to the eighth research sub-question (RQ8: 'Which SISP triggers impact on the success of SISP in the banking sector?') and will be discussed in more detail in Chapter 7.

5.13 Summary

In order to answer the main research question the eight research sub-questions need to be answered. The aim of this chapter was to present and discuss a range of statistical analysis generated as the basis for understanding the characteristics and IS planning experiences of the responding banks. The demographics concentrated on providing common information about the participating banks and respondents. It was explained that a central bank, a domestic commercial bank and a domestic-foreign commercial bank provided the best combination for determining the process of SISP in the banking sector. It was mentioned that the central bank had initiated the IS strategy for most of the payment systems in the country. IS planners in the banking sector who participated in SISP were highly experienced within their organisation and in IT. In addition, they were highly educated. It was shown that the majority of participants developed their strategies for their banks using in-house methods. Furthermore, it appeared that the domestic and the domestic-foreign commercial banks had formal business strategies which were written and documented, while the central bank had informal business strategies which were described as being only in people's heads.

The reliability test covered all the research constructs to find the extent to which the measurements were reliable and valid. Variables above the acceptable level of 'item-to-total' correlation and higher than the acceptable level of the reliability coefficient

'Cronbach's Alpha' were presented; this ensured that they were acceptable for further analysis.

The findings indicate that the 17 SISP objectives, identified from different industries across several countries, are applicable to the banking sector which is a single industry (banking) and is in one country (Saudi Arabia). In addition, the number of SISP objectives has been reduced to five, to ensure that they are more practical and achievable for the banking sector including the Saudi one. These factors are: 1) planning and deployment of information systems; 2) leading organisation changes; 3) improving stakeholder involvement and communication; 4) achieving strategic priorities; and 5) alignment of organisational policies and architecture for the business and information systems.

Multiple regression analysis highlighted relationships between the elements of the main factors which were influencing SISP in the banking sector and, as a result, the SISP successes were explored.

The main factors investigated included achievement of objectives; SISP internal contextual factors in the banking sector; functions of external consultant with SISP; external contextual factors in the banking sector; external and internal measures of SISP success; key stakeholders' influences; and SISP triggers in the banking sector. The findings have helped to provide answers to the research sub-questions and will be discussed in more detail in Chapter 5.

CHAPTER 6
Qualitative Analysis: Confirmation and Explanation of Analysis of Quantitative Data

6.1 Introduction

The previous two chapters presented an analysis of the quantitative data and discussed the results of a range of statistical analyses. This chapter will confirm and then explain these results in order to answer the main research question and the eight research sub-questions (RQ1-RQ8). To achieve this aim, as explained in phase 3 of the data collections in Chapter 4 (Section 4.6.3), an in-depth case study was conducted in three banks, through 57 interviews.

This chapter is therefore organised as follows. Prior to confirming and explaining the analysis results, the organisations' backgrounds will be discussed in section 6.2. The remaining sections will then investigate the relationships between the elements of the research sub-questions and SISP success, as follows. In section 6.3, the SISP objectives in the banking sector will be investigated; in section 6.4, the internal contextual factors observed in the sector will be reviewed; the functions of the external consultants for SISP will be identified in section 6.5; then section 6.6 will investigate the external contextual factors affecting SISP. The remaining sections of the chapter will focus on the external and internal measures of SISP success in the sector, the key stakeholders' roles in SISP, and SISP triggers in the banking sector. The chapter ends with a summary.

6.2 Organisational Background

In Chapter 5, it was explained that a central bank, a domestic commercial bank and a domestic-foreign commercial bank provided the best combination for exploring the process of SISP in the banking sector. The following subsections examine in detail the background of each of these three organisations.

6.2.1 Central Bank

The Saudi Arabian Monetary Agency (SAMA) was established by Royal Decree on 4 October 1952; the Kingdom's central bank was established with the objectives of issuing and strengthening the Saudi currency, stabilising its internal and external value and dealing with the banking affairs of the government. A subsequent Royal Decree, in 1957, extended SAMA's objectives to include regulating exchange dealers and managing the country's official foreign exchange reserves. In 1959, a Currency Law was issued which conferred on SAMA the sole privilege of minting, printing and issuing Saudi currency, as determined by the Council of Ministers. It became mandatory for SAMA to maintain full control of gold and convertible foreign currencies for all currency issued (SAMA, 2003). The Banking Control Law of 1966 gave SAMA broad powers to regulate and supervise Saudi banks and to safeguard the banking system (Al-Sayari and Padoa-Schioppa, 2003). SAMA operates a network of 10 regional branches, which satisfies the needs of the government for the collection and distribution of funds and meets the requirements of the local commercial banks for currency and remittances.

SAMA's IT policy has been summarised as follows:

> *"SAMA, with the cooperation and support of the commercial banks, has taken, and continues to take, the lead in development and day-to-day management of a number of modern and sophisticated payment and*

> *settlement systems. These include Automated Cheque Clearing Houses; Saudi Payments Network (SPAN) which supports ATMs and Point of Sale Terminals and Tadawul, the Electronic Share Trading System, with T+O settlement features. These state-of-the-art systems have been linked together with the Saudi Arabian Riyal Inter-Bank System (SARIE), an electronic fund transfer system with Real Time Gross Settlement (RTGS) features. The payment systems not only meet but exceed BIS standards*" (SAMA Governor, 2007).

6.2.2 Domestic Bank

Saudi Arabia's National Commercial Bank (NCB) heads the top 25 regional (Middle Eastern) banks, with a capital of US$ 6.4bn in 2008, when it was ranked 109th among world banks (Baker-Self et al., 2008). The NCB is the most prominent of all the Saudi banks and was the first to be established in Saudi Arabia. When it began trading on 26 December 1953 its initial paid-up capital was SR 30 million (US$ 8 million) (NCB, 2007). It maintained its legal structure as a general partnership until it was converted into a Saudi joint stock company in 1997, its first step towards initial public offering. In 1999, the government, through the Ministry of Finance's Public Investment Fund (PIF), then acquired a majority holding in the bank (NCB, 2007).

The NCB annual report for 2007 shows the following financial indicators: the NCB was the largest bank in terms of capital in the Arab world; its total assets at the year-end totalled SR 208,717 million (US$ 55,658 million); the net profit for its fiscal year reached SR 6,038 million (US$ 1,610 million); the shareholders' equity at the year-end was SR 28,181 million (US$ 7,515 million); the return on average shareholder equity for the same year amounted to 23.1%; and the earnings per share for the 2007 fiscal year amounted to SR 4.01 (US$ 1.07).

By February 2009, the NCB operated 279 branches throughout the Kingdom (SAMA, Monthly Statistical Bulletin, 2009), having over two million clients and a total of 5412

employees, of whom 86.07% were Saudis (NCB, 2007). The bank also operated two international branches, in Beirut and in Bahrain, and three representative offices, in London, Seoul and Singapore (NCB, 2007).

On the IT side, the bank had 1,484 automated teller machines (ATMs) and 14,051 point-of-sale (PoS) terminals (SAMA, Monthly Statistical Bulletin, 2009). It operated a comprehensive array of alternative delivery channels such as telephone banking, mobile banking, online banking, eCorp, ePay, Tadawul and international brokerage (NCB, 2007). Over 85.47% of customer transactions were successfully executed through alternative delivery channels during the 2007 fiscal year (NCB, 2007).

6.2.3 Domestic-Foreign Bank

The **Saudi Investment Bank (SAIB)** is a Saudi Arabian joint stock company; it was established on 23 June 1976 and began operating in March 1977. The shareholders of the bank, a publicly listed company, include J. P. Morgan Chase, Mizuho Corporate Bank (formerly the Industrial Bank of Japan), Saudi public and private institutions and Saudi individuals (SAIB, 2008). By February 2009, the bank had 36 branches operating throughout the Kingdom (SAMA, Monthly Statistical Bulletin, 2009). **It** offers traditional wholesale, retail and commercial banking products and services, as well as investment banking. In particular, it arranges the financing in the quasi-governmental and private industrial sectors and trades financial products for imports and the increasing number of Saudi exports. **It** is committed to the promotion of the private industrial and commercial sectors and is actively supporting several major projects.

On the retail side, **SAIB** is one of the major players in providing brokerage services in the Saudi equities market; it has several branches which are dedicated solely to this investment activity. **It** also acts on behalf of its private banking customers as an international brokerage intermediary and provides options for foreign exchange, precious metals and other treasury products. SAIB had a capital of US$ 1.6bn and in 2008 was ranked 305th in the top 1000 world banks (Baker-Self et al., 2008). The bank's 2007 annual report showed net profits of SR 822.2 million (US$ 220 million) for the year ending 31 December 2007, earnings per share of SR 2.10 (US$ 0.56), liabilities of SR 32,768 million (US$ 8,737 million) and total assets of SR 46,542 million (US$ 12,411 million) (SAIB, 2008).

In 1999, SAIB and American Express (Amex-Middle East) formed a joint venture company called Amex Saudi Arabia Ltd (ASAL) in order to manage the Amex franchise in the Kingdom. ASAL and SAIB are working together to allow the brand to assume its correct prominence within the Kingdom and to permit the issuance of a number of Saudi Riyal denominated products to better serve the local market. In October 2002, ASAL issued its Blue Card, the first Saudi Riyal denominated Amex credit card, which is proving to be a very popular and attractive choice for the citizens and residents of the Kingdom (SAIB, 2008).

In terms of IT, **SAIB** is expanding its provision of electronic banking products and services to its customer base, inside and outside Saudi Arabia. A number of products and services have been designed and developed to comply with the standards of the Saudi banking sector and of international payment systems in order to satisfy its customers' requirements. The electronic banking products and services include the

Saudi Express ATM card, widely acceptable in the Gulf Cooperation Council (GCC) countries and throughout the world (via the Maestro network); a network of state-of-the-art ATMs; a network of PoS terminals; cash withdrawal services for holders of ATM cards issued by other GCC countries and for American Express cardholders; purchase payment facilities for American Express, Visa and MasterCard members; telephone banking services and Internet banking (SAIB, 2008). The bank operates 250 ATMs and 142 PoS terminals (SAMA, Monthly Statistical Bulletin, 2009).

6.3 SISP Objectives in the Banking Sector

The following sections discuss SISP objectives in the three banks and the impact of SISP achievements on the success of SISP.

6.3.1 SISP Objectives in the Three Banks

The 17 SISP objectives, listed in Table 6.1, were collected from different industries across various countries and are discussed in detail in Chapter 2 (section 2.4.3). Their applicability to the Saudi banking sector were examined in Chapter 5 (section 5.4.1) and it was found that these objectives were compatible in that environment.

Table 6.1:SISP Objectives

Code	SISP Objectives
Obj1	Identify strategic applications helping bank to achieve its goals.
Obj2	Align IS with business needs.
Obj3	Adopt or match goals of IS to change goals of bank.
Obj4	Understand strategic priorities of top management.
Obj5	Gain competitive advantage from IS (e.g. more market share).
Obj6	Increase visibility of IS in organisation.
Obj7	Improve communication about IS with users.
Obj8	Increase top management commitment to IS.
Obj9	Generate new ideas to reengineer business processes through IS.
Obj10	Envisage future opportunities and prepare for future.
Obj11	Identify IS applications.
Obj12	Identify new and higher payback applications.
Obj13	Forecast IS resource requirements.
Obj14	Allocate IS resources.
Obj15	Facilitate management and control of IS resources.
Obj16	Define new business strategies or modify existing ones.
Obj17	Develop technology policies and architecture.

In order to confirm the answer to the first research sub-question (RQ1: What are the SISP objectives in the banking sector?), the researcher presented and discussed the objectives during interviews, at meetings and while reviewing documents, to confirm their applicability to the banking sector.

All of the participants from the three banks agreed that the 17 SISP objectives were applicable in the Saudi banking sector, offering the following examples of their SISP objectives.

SAMA's Vice-Governor, Muhammad Al-Jasser (2002), referred to a number of the objectives, including Obj5, Obj4, Obj1, Obj17, Obj10, Obj7, Obj11 and Obj12, during his response to Booz Allen Hamilton when discussing the IS strategy in the banking sector over the coming five years (see below):

> *"SAMA understands that while it succeeded in providing superior financial infrastructure and distinctive functional benefits, today this is no*

> *longer enough. With the advent of the World Trade Organisation (WTO) and the openness of financial services, most banking and financial infrastructures in the countries of the Gulf Cooperation Council (GCC) and other parts of the world would be in direct competition with Saudi banks as they have their quality and performance met and as perceived by their consumers' uniformly high standards* [Obj5]. *Thus, SAMA must continue to find and deploy new ways of differentiating its banking and financial sectors' products and services* [Obj4]. *As such, SAMA has set up a strategy to continue pursuing IT solutions that emphasise payment process benefits, which make financial transactions between banks and their clients easier, quicker, cheaper, and more pleasant (e.g. through a transition from cash-based to electronic-based financial transactions)* [Obj1, Obj17 and Obj10]. *Saudi banks, by their role, would then concentrate more on emphasising clients-relationship benefits; by rewarding consumers to identify themselves and to reveal their desired services* [Obj7, Obj11 and Obj12]. *In other words, the basis for creating successful banking and financial sector strategy has expanded to two dimensions, one led by SAMA and the other by Saudi banks"* (Al-Jasser, 2002).

Tommaso Padoa-Schioppa, Chairman of the Committee on Payment and Settlement Systems, under the aegis of the Bank for International Settlements (BIS), and Hamad Al-Sayari, SAMA's Governor (2003), mentioned two SISP objectives: Obj17 and Obj7, in the following way:

> "*SAMA's role in payment systems has evolved from its broad mandate to maintain the safety and soundness of the Saudi banking and monetary system and to strengthen its credibility. It is judicious exercise of its regulatory powers that has led the development of the payment systems in the country with the full participation of the banks. SAMA believes that its leading role in the payment, clearing and settlement systems is essential to ensure effective execution of a rational and consistent national strategy for payment systems* [Obj17]. *This approach is based on a conviction that significant financial benefits will accrue to all financial market participants from a collaborative rather than a competitive development of a common payments infrastructure"* [Obj7] (Al-Sayari and Padoa-Schioppa, 2003).

Gamble, Al Kuwaz and Al Sayari (1998, 2006) counted at least eight SISP objectives, including Obj6, Obj7, Obj9, Obj2, Obj4, Obj16, Obj11 and Obj12, as follows:

> *"SAMA's strategy of payment systems can positively impact on the various parties involved: a) Individuals and companies will feel encouraged by the quality and convenience of modern technology-based facilities that provide for their day-to-day liquidity and commercial relationships* [Obj6 and Obj7], *b) SAMA will be able to set information standards and benefit from*

> *automated controls, thus promoting an efficient processing environment for banks* [Obj9 and Obj2], *c) The banking sector will be able to provide for the convenient Kingdom-wide access to a variety of new products and services, presently made available under a variety of processing options* [Obj4 and Obj16], *and d) the Saudi economy will benefit from the trading thrust originated in the greater flexibility in time and place and the lower cost of banking transactions"* [Obj11 and Obj12] (SAMA, Payments Systems Strategy, 1998; 2006).

The SAMA IT manager (1998, 2007), referred to a number of SISP objectives, including Obj8, Obj3, Obj17, Obj2, Obj6, Obj13 and Obj14:

> *"The IS strategic plan is a road map for the organisation (top management, business users and IT people)* [Obj8, Obj3 and Obj17]. *It guarantees that IT solutions are driven by critical business objectives and ensures IT investments are cost effective and within planned budgets* [Obj2]. *It identifies re-engineering projects, establishes business and management priorities, guarantees effective manpower planning and ensures human resource training"* [Obj6, Obj13 and Obj14] (SAMA, MIS, 1998; 2007).

A SAIB Executive (1997, 2004) provided an example of SISP Obj2, as follows:

> *"The business growth cannot be sustained nor can the corporate base be defended against competition without more appropriate business systems' support. The IS strategic plan examines the current business systems' support to identify shortcomings and to point the way forward for the next 5 years. The strategic plan for the business systems is validated against the recent 5-year plan for the business"* (SAIB, ITSP, 1997; 2004).

The SAIB IT Director (1997, 2004) referred to six of the objectives (Obj2, Obj17, Obj1, Obj12, Obj15 and Obj10) in the following way:

> *"The IS strategic plan objectives are threefold: 1. Provide an immediate way forward that can lead to the essential core business system being implemented within a 12-month timeframe* [Obj2 and Obj7]. *2. Provide for the long term by choosing solutions that address the short term but that are known to be capable of supporting the needs of the 5-year business plan* [Obj1 and Obj12]. *3. Select proven solutions from reliable vendors who are able to deliver on the current leading edge and who will continue to evolve solutions on the future leading edge"* [Obj15 and Obj10] (SAIB, ITSP, 1997, 2004).

These findings and the related findings reported in Chapter 5 are discussed in detail in Chapter 7.

6.3.2 Impact of the Achievement of Objectives on SISP Success

For the purpose of this research, as discussed in Chapter 5 (section 5.4.2), the 17 SISP objectives were reduced to five clearer objectives: 1) planning and deployment of information systems; 2) leading organisational changes; 3) improving stakeholder involvement and communication; 4) achieving the strategic priorities and 5) aligning organisational policies and architecture for the business and IS. These five objectives are more practical and achievable for the banking sector. In order to confirm the answer to the second research sub-question (RQ2: 'What are the main elements of SISP objectives in the banking sector which, when achieved, influence the success of SISP?'), the following subsections discuss responses concerning the impact of these five objectives on the success of SISP, as derived from the statistical analysis in Chapter 5 (section 5.6).

6.3.2.1 Elements with Positive Impacts on SISP Success

All participants from the three banks had the same opinion regarding how the achievement of 'leading organisational changes' had led to SISP success in the banking sector. The main organisational changes within the Saudi banking sector had occurred through a transition from cash-based to electronic-based financial transactions. Therefore, SISP had succeeded because it had achieved this essential objective. A SAMA executive explained,

> *"Cash-based transactions, including the use of cheques, were bypassed by developing and implementing SISP to enable electronic transfers. It was inconceivable that cash-based transactions could be bypassed in favour of*

> *utilising electronic systems, so this great achievement had a very positive impact on SISP success."*

Many participants from the three banks argued that the achievement of 'improving stakeholder involvement and communication' had had a positive impact on SISP success. Stakeholder involvement and communication were improved through meetings, presentations and progress reports. The NCB IT director explained,

> *"By developing and implementing SISP, regular meetings between all stakeholders for each bank and between SAMA and banks were held. In addition, a bi-weekly progress report and a quarterly presentation for top management have been made. We feel that we were working for our personal project. Thus, it had a very positive impact on SISP success."*

Furthermore, many business directors involved in SISP referred to its use in payment systems by using the expression "*It's my baby"*.

Many participants from the three banks felt that 'achieving strategic priorities' had had a positive impact on SISP success, because it helped the banking sector to define which systems to start with. Thus, management information systems (MIS) and automated clearing systems were first developed to run internally, then SPAN and SARIE were implemented, to connect SAMA with the banks. Later, the SADAD Payment System (established by SAMA) was developed for national electronic bill presentation and payment and Tadawul, the Saudi Stock Market System, was introduced as the only stock exchange in Saudi Arabia. The SAMA IT director summarised the achievement of this objective in the following way:

> *"Using SISP helped priorities in development and implemented our payment systems and coordinated between them. Therefore, it had a positive impact on SISP success."*

6.3.2.2 Elements with Negative Impacts on SISP Success

None of the elements appeared to have a negative impact on the success of SISP.

6.3.2.3 Elements with No Impact on SISP Success

Many participants from the three banks stated that the 'planning and deployment of IS' had had no impact on SISP success, because it is a fundamental issue for the banking sector. At the same time, banks cannot do their business in today's world without planning and deploying IS, therefore it is not only a SISP objective but also a banking industry objective. Hence its achievement is a banking industry success before it is a SISP success; its achievement influences bank success and in turn influences SISP success. Consequently, it is a macro-objective for bank success and a micro-objective for SISP success. The SAIB IT director argued that there could be no banking industry today without technology, while the NCB executive put it this way:

"Banks can't work without IS."

Participants from all three banks also said that the 'alignment of organisational policies and architecture for business and IS' had had no impact on SISP success. This was not because it was not important, but because Saudi banks had already aligned their organisational policies and their architecture with the needs of business and IS; therefore this alignment had been achieved before SISP was developed. Within the banking sector, IT directors, business directors and external consultants utilised the support of their executives and started this alignment before developing SISP for payment systems. The establishment of payment systems was a national project which involved the cooperation of banks, according to a SAMA executive:

> *"SAMA, with the cooperation and support of the commercial banks, has taken, and continues to take the lead in development and day-to-day management of a number of modern and sophisticated payment and settlement systems".*

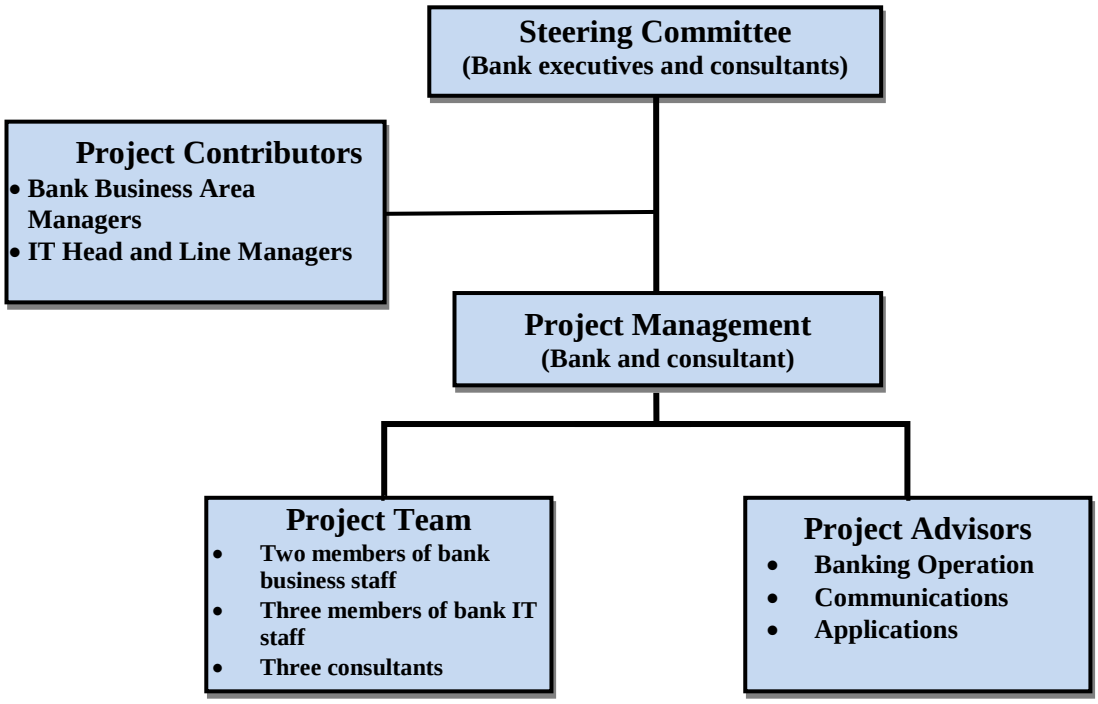
These findings and the related findings from Chapter 5 are discussed in detail in Chapter 7. The same applies to the remainder of the findings presented in this chapter.

6.4 SISP Internal Contextual Factors in the Banking Sector

As discussed in Chapter 2, the availability of the business strategy, the alignment of the IS strategy with the business strategy, the SISP team membership, management commitment and management support are all internal contextual factors affecting SISP. This section discusses contributions concerning the impact of the main elements of SISP internal contextual factors on the success of SISP, as derived from the statistical analysis in Chapter 5 (section 5.7), in order to confirm the answer to the third research sub-question, RQ3: 'What are the main elements, the internal contextual factors, of SISP which affect the success of SISP in the banking sector?'

Before discussing the internal contextual factors relating to the three banks, it will be helpful to explain briefly the organisational structure of SISP and the main steps to creating a workable SISP. The organisation of SISP, which according to many IT directors and consultants in the three banks brought the right mix of banking, strategy and technology resources to the project, has a fivefold structure, as shown in Figure 6.1. The first group is the steering committee, which contains one or more bank executives and one or more consultants (referred to as a partners or associate partners). The main functions of the committee are to attend periodic committee meetings, provide project oversight and vision, approve recommendations, clear any major project roadblocks and assign responsibilities for going forward and implementing recommendations. The second group is the project contributors, comprising banks' business area managers, IT heads and line managers. Their functions are to provide guidance throughout the project and in specific functional areas, to confirm project recommendations and to conduct quality assurance reviews.

Figure 6.1: Organisational Structure of SISP



The third group, the project management, involves the bank's project manager and the consultant. The project manager aims to oversee the project's progress and status, organise and manage day-to-day team activities and priorities, including project scope and schedule, drive developing conclusions and recommendations, track and resolve issues, and maintain project communication. The project team is the fourth group, comprising two members of the bank's business staff and three IT staff as well as three external consultants. The team collects data, conducts interviews and workshops, formulates findings, completes detailed analyses, completes business cases and develops and documents findings and recommendations. The last group is the project advisers, consisting of people specialising in banking operations, communications and applications. Their functions are to provide in-depth knowledge and expertise, present recommendations and offer relevant examples concerning best practice.

The main steps to creating a workable SISP payment system, as described by IT directors and consultants from the three banks during the interviews, is summarised as follows:

> *"The key steps of SISP for the payment systems were: 1. start with a focus on the business model and strategy, 2. build the layers of the IS strategy, taking into account the existing IS investments and industry insights, 3. confirm with senior management to ensure it represents a coherent whole and 4. develop a migration strategy: how the organisation can move in a managed fashion from the 'as is' to the 'to be'."*

6.4.1 Availability of the Business Strategy in the Banking Sector

Before discussing the availability of the business strategy and the impact of its elements on SISP success, this subsection briefly explains the formality of the business strategy in the three banks, which can be either formal (written and documented) or informal (unwritten, in people's heads). As derived from the statistical analysis in Chapter 5 (section 5.2.2.12), the two commercial banks had only formal business strategies, while the central bank had both formal and informal ones. The reasons for not having a formal business strategy were explained by business directors as follows:

A business director from SAMA, with 25 years' experience with the central bank, said:

> *"We know our business and business strategy well and we can explain them clearly. Why should we write them down?"*

Another SAMA business director, with 20 years' experience, said:

> *"Nobody asked me to write down the business strategy, because I feel everybody knows it."*

A SAMA business manager, with 19 years' experience, stated simply:

> *"I am implementing it* [the business strategy], *not writing it."*

A business director with 29 years' experience in SAMA explained the reason for not having a formal business strategy as follows:

> *"I have been working several years in different departments and I know the business of the central bank and the business strategy as well as I know my own children."*

These findings indicate that the business strategies in the banking sector are formally available within banks and, in the case of the informal business strategies of SAMA, the business directors and managers understand the business clearly, due to their lengthy experience with the bank.

The key elements associated with the availability of the business strategy, as explained in Chapter 2, include professional banking staff who know the business of their banks and are aware of their partners and competitors. These elements which impact on SISP success, as derived from the statistical analysis in Chapter 5 (section 5.7.1), will now be discussed.

6.4.1.1 Elements with Positive Impacts on SISP Success

Many participants from the three banks stated that professional banking staff who knew the business of the bank had positive effects on SISP success, because, as shown in Figure 6.1, the main project contributors and project team were drawn from experienced business area directors, managers and employees. In order to provide guidance throughout the project in specific functional areas and with deep knowledge and expertise, it is essential for professional banking staff to know the business of the bank. A SAMA consultant explained this in the following way:

> *"In order to develop a successful SISP, we make sure that we meet with the business directors, managers and experienced employees to get deep*

knowledge about their business. We even wait for them longer and see them outside the bank."

An NCB IT director explained it as follows:

"It is a must to have professional staff who know the business of the bank to provide guidance throughout the project."

6.4.1.2 Elements with Negative Impacts on SISP Success

There were no elements that impacted negatively on SISP success.

6.4.1.3 Elements with No Impact on SISP Success

There were two elements which had no impact on SISP success. First, according to many participants from the three banks, professional banking staff were aware that the bank's partners had no impact, because most of the SISP team already knew the bank's partners and some of them had worked for a partner before joining the bank. For example, an NCB business director said:

"All of our employees know our partner organisations from the first year of joining the bank. And we hire some of our employees from our partner organisations. So, in the banking sector, professional banking staff are aware that the bank's partners have no impact on SISP success."

Secondly, participants stated that professional banking staff were aware that their competitors had no impact on SISP success, because the development and implementation of SISP for the payment systems occurred with the cooperation of all Saudi banks and SAMA, as an SAIB IT director explained:

"It is good to have professional banking staff who know our competitors, but it is not essential for the success of SISP, since all members of the banking sector participated in its development and implementation."

6.4.2 Alignment of IS Strategy with Business Strategy in the Banking Sector

As discussed in Chapter 2, twelve elements were found to govern the alignment of IS strategy with business strategy. This subsection discusses interview data concerning the

impact of these elements on SISP success, as derived from the statistical analysis in Chapter 5 (section 5.7.2).

6.4.2.1 Elements having a Positive Impact on SISP Success

A number of elements were found to have had a positive impact on the success of SISP. According to many respondents, one such element was the IS staff who were able to keep up with advances in IT, because SAMA had made great efforts to keep its IS staff up to date through IT training and education in advanced countries including the US, the UK, France, Germany and Japan. At the same time, banks hired expatriates with IT experience. Thus, a SAMA IT director said:

> *"Training helped to keep IS staff up to date with IT advances. It had a positive impact on SISP success."*

Another positive factor identified by many participants was that business goals and objectives were known to IS managers, because it took them in the same direction as the business managers. This was achieved because IS management attended most of the business meetings and were members of the main committees in the banks, as an NCB IT director explained:

> *"During SISP development and implementation of the payment systems, participating in most of the business meetings of the bank and joining the main committees expanded our understanding of the business goals and objectives, so it had a positive impact on SISP success."*

In addition, many of the IS staff came from a business background.

A third element identified by many contributors was that when IS departments provided reliable services, this in turn had a positive impact on SISP success, because the reliable services between the IS department and other departments in the banks allowed IS staff

to establish good relationships, thus allowing them to solve their problems and understand their needs. A SAIB business director explained this as follows:

> *"Consistently, our IS department provides reliable services and we rely heavily on them. This created a satisfactory relationship between IS department and other departments. This relationship helped in SISP development when it started, so it affected SISP success positively."*

Participants explained that business and IS management worked together in prioritising application development, which was also found to impact positively on SISP success, because it assisted by recognising the importance of the application for the business and it provided pre-request applications for other applications, or applications requested by the government or international institutions. A SAMA business director explained this in the following way:

> *"Prioritising the development of applications by both business and IS management led to SISP success. This is normally prepared according to the significance of the applications to the payment systems."*

In addition, participants explained that SISP in the Saudi banking sector had benefited from the corporate business plan made available to IS management, because its availability should drive the entire management of each bank to progress in the same direction. Usually, this was arranged by the involvement of IS management during the different stages of the development and implementation of the corporate business plan, as an NCB IT manager asserted:

> *"Usually, it* [the corporate business plan] *was arranged by the involvement of IS management during the different stages of the development and implementation of the corporate business plan. When we developed SISP for the payment systems, the complete picture was available to us, so it had a positive impact on SISP success."*

In the Saudi banking sector, users who actively participated in IS planning also had a positive impact on SISP success, according to many participants, because it assisted

them in understanding the IS environment and the terminology used. At the same time, it enabled them to transfer facts and data that they had collected on specific subjects to the SISP team. A SAIB business manager explained:

> *"Users participated in IS planning during seminars, presentations and regular meetings on IS planning. They shared their information with the SISP team. As a result, it had a positive impact on SISP success."*

6.4.2.2 Elements with Negative Impacts on SISP Success

This group includes only one element that was found to impact negatively on the success of SISP, concerned with the IS department's being responsive to user needs. As many IT directors and managers from the three banks explained, this was because some of the user needs were not business-related, but specifically focused on personal matters. A SAMA IT director illustrated this point:

> *"These user needs are computer games, TV channels and downloading software not needed for the business and sometimes having computer viruses. In addition, some of these needs include complaining about hardware to get a new one. These kinds of user needs take up a lot of effort without adding value, so they have a negative impact on SISP success."*

6.4.2.3 Elements with No Impact on SISP Success

There were a number of elements which had no impact on the success of SISP, including the IS management's knowledge of the business. Many participants from the three banks explained that this was because the banks would hire consultants who were experts in this area. An NCB IT director clarified this:

> *"It is good that IS management is knowledgeable about business, but it is not a necessity for SISP success, since we employ consultants who are specialised in accounting, finance and other banks' products, for short or long periods, to help us in developing SISP."*

Many participants identified the confidence of top management in the IS department as having had no impact on SISP success, because confidence would not be enough when

decisions about the use of SISP for payment systems would affect the entire national banking sector. A SAMA executive gave the following explanation:

> *"We have worked with them* [IS department] *for many years and they are committed, well trained and well educated, so we have great confidence in them. SISP for the payment systems will affect not only the banking sector but also the whole country, nationally and internationally. Therefore we have to discuss it with some national and international organisations and consultants."*

Several participants from the three banks explained that irrespective of whether the IS department provided efficient services, it had no impact on SISP success, because the banking industry, which relies heavily on IS, must have efficient services from the IS department. These services include software and hardware provision, seven days a week and twenty-four hours a day. Moreover, these services would influence the entire bank, even before SISP was developed, as a SAIB business director explained:

> *"At the present time, efficient IS services are essential to keep banks in business and any bank without them will be out. So, in our case, these services had no impact on SISP success."*

It was also found that the frequency of communication between users and the IS department had no impact on SISP success. Participants stated that this was because frequent communication between users and the IS department was necessary for the daily functioning of their banks, irrespective of the development or implementation of SISP. An NCB IT director explained it thus:

> *"Frequent communication is needed regardless of SISP, so in this situation, it had no impact on SISP success."*

Again, several participants explained that top management's knowledge of IS had had no impact on SISP success, because the banks could hire experts in the IS area to explain it to the top managers, as a SAMA executive said:

> "*It is good that top management are knowledgeable about IS but not essential for SISP success. We hire consultants who are specialised in data base, networking, programming and other IS products, for short or long periods, to help us in developing SISP. At the same time, they put IS in plain words to the top management."*

6.4.3 SISP Team Members in the Banking Sector

As discussed in Chapter 2, there were six elements governing the SISP team members. Those which were found to affect SISP success, according to the statistical analysis in Chapter 5 (Section 5.7.3), are discussed in this subsection.

6.4.3.1 Elements having a Positive Impact on SISP Success

The first group of factors which were found to have positively affected SISP success in the Saudi banking sector were concerned with the IT personnel's having been trained in organisational objectives and key issues. Many participants asserted that this was because the relevant training helped the IT personnel to understand the bank's objectives and to identify the capabilities of each employee in each department, in order to recognise when difficulties occurred during the development and implementation of SISP. A SAMA IT director put it like this:

> *"IT personnel were trained about bank objectives, at least in three ways, which are general training in the area of banking products in the banking institute, presentations from each department to IT personnel and by sending each newly appointed IT employee to work in different departments. And when IT personnel became SISP team members this had a positive impact on SISP success."*

A second positive factor, according to participants, was that team members were chosen on the basis of their competency, according to certain criteria such as experience, ability to deal with different opinions and obligation, as an NCB IT director explained:

> *"SISP team members were chosen according to their commitment, experience, personality and their ability to work with foreigners. At the end of the day, this contributed to the success of SISP."*

6.4.3.2 Elements with Negative Impacts on SISP Success

There were no elements in this group which were found to have impacted negatively on SISP success.

6.4.3.3 Elements with No Impact on SISP Success

There were four elements which appeared to have had no impact on SISP success, the first being the choice of team members with high credibility. According to participants, this was because it was common for all projects to have highly credible team members and this was not exclusive to important projects such as the use of SISP for payment systems. A SAIB IT manager stated simply:

> *"In our banking industry, normally team members with high credibility are chosen in any project, so I feel it had no effect on SISP success."*

Secondly, the drawing of teams from the organisational levels responsible for implementing the plan was said to have had no impact on SISP success, because this function could have been fulfilled with the help of consultants who were experts in payment systems. This response of an NCB executive was typical:

> "*We hired consultants who are experts in implementing SISP for the payment systems, from distinguished consultancy companies and banks, to help our employees in the implementing of SISP for the payment systems, As a result, it had no impact on SISP success."*

The planning team's being informed about business changes that were occurring during strategic planning for IS also had no impact on SISP success, because business products for the payment systems were clearly defined for the team at the beginning of SISP. In addition, during the development and implementation of SISP, there were few changes

in the business products. These points were made by several participants, including this SAMA executive:

> *"SISP for payment systems were developed and implemented for the Saudi banking sector for the first time. So, we ensured that all banking products were known to the team before starting SISP. Also, we froze critical changes during the development of SISP. Thus, it had no impact on SISP success."*

Thirdly, many participants explained that SISP success was unaffected by whether team members were briefed about the scope and goals of the project, the organisation's mission and purpose, and its internal and external environments. This was because these team members had experience of the banking sector which had taught them about the organisation's missions and purposes and its internal and external environments, prior to participation in SISP. In addition, the consultants who were members of the SISP team were experts in similar projects and the goals and scope of the SISP project were clear to them, as a SAMA consultant explained:

> *"In the Saudi banking sector, the organisation's mission and purpose and its internal and external environments were known to most bank employees, not only SISP team members. Also, scope and goals of the SISP project were understandable to consultants. Thus, it had no influence on SISP success."*

6.4.4 Top Management Commitment to SISP in the Banking Sector

As discussed in Chapter 2, there were five elements governing the top management's commitment to SISP. The impact of these elements on the success of SISP is now discussed, based on the statistical analysis in Chapter 5 (Section 5.7.4).

6.4.4.1 Elements with Positive Impacts on SISP Success

The only element found to have had a positive impact on the success of SISP was whether senior management's key planning issues were determined at the outset of

SISP. Participants felt its impact arose from the fact that the key issues in the Saudi banking sector were time, expertise, availability of software and hardware, administration issues, including gaining approval from other organisations, and budgeting, all of which were essential for developing and implementing SISP. Normally, these elements would be discussed at the outset of SISP in several meetings with the top management and in the presence of consultants. A SAMA executive clarified this:

> "*SISP key issues were determined by senior management at the beginning, so there would not be any surprises during developing and implementing SISP and this would save their time. The main issues were time, availability of experts, maintenance of hardware and software, national telecommunications and money."*

6.4.4.2 Elements with a Negative Impact on SISP Success

No elements were found to have impacted negatively on SISP success.

6.4.4.3 Elements with No Impact on SISP Success

Four elements were found to have had no impact on SISP success. First, many participants argued that whether or not the top executives championed the SISP process was irrelevant to SISP success, because when they did so, they delegated their authority to a senior director, generally the IT director. An NCB IT director's explanation was this:

> *"Mainly, my superior* [executive] *delegated SISP process championship to me because of my seniority in the bank and in IT."*

A second factor identified by many participants as having had no impact on the success of SISP was the senior management's provision of feedback and guidance throughout the process, because there was little such feedback, since the payment systems were new to them. An NCB business director said:

> *"We give the feedback on what we know while we are learning about the payment systems. Payment systems were new for the entire banking sector, so it was not essential for SISP success."*

Thirdly, while senior managers were briefed throughout the project to ensure their commitment, participants considered this to have had no impact on SISP success, because it was common not only to brief senior managers throughout the SISP project, but also to ensure their commitment at the outset. A SAIB IT manager explained:

> *"We usually got senior management commitment at the beginning and we did not wait to brief them throughout the SISP project to get their commitment, so it had no impact on SISP success."*

Finally, many participants argued that the briefing of executives on the scope and objectives of the process and approaches to it, in order to obtain their commitment, had also had no impact on SISP success, because the use of SISP for payment systems in the banking sector was initiated by executives who were involved deeply in the process from the beginning. A SAMA executive provided clarification of this point:

> *"We have started SISP for the payment systems and have full commitment to it because these payment systems have impacts on banking and the country's economy. SISP for payment systems was suggested to us by international institutions. Thus, it had no impact on SISP success."*

6.4.5 Top Management Support for SISP in the Banking Sector

As discussed in Chapter 2, there were eight elements governing the top management's support for SISP. The effects of these elements on the success of SISP, as derived from the statistical analysis in Chapter 5 (Section 5.7.5), are discussed below.

6.4.5.1 Elements with Positive Impacts on SISP Success

There was only one element that impacted positively on the success of SISP, according to participants. This was the high credibility of the leaders and sponsors, because they

kept their promises to their subordinates and consultants and because they established a respected relationship with others, which motivated the members of SISP to achieve its objectives. A SAIB IT director said:

> *"The high credibility of my superior led to a trust between the members of SISP needed for its success, so it had a positive impact on SISP success."*

6.4.5.2 Elements with No Impact on SISP Success

No element was found to have impacted negatively on SISP success; all seven remaining elements in this category were found to have had no impact on SISP success. The first of these was the allocation of sufficient resources, which participants said was irrelevant because SISP processes for the payment systems in the Saudi banking sector would not have occurred if the allocation of resources had been insufficient. A SAMA IT manager explained this:

> *"It is not a matter of success or failure of SISP, it is a matter of initiating the SISP process or not, when sufficient resources are or are not allocated. And this is understandable to our executives. Accordingly, it had no influence on SISP success."*

Secondly, organisational support had no impact on SISP success, because SISP processes for the payment systems could not start unless organisational support was guaranteed. The Saudi banking sector is generally centralised in terms of decision making; therefore, when the SISP process was approved, organisational support was assured, as an NCB consultant stated:

> "*Organisational support is a prerequisite for the SISP process in the payment systems. Therefore, it had no impact on SISP success."*

Thirdly, many of the participants argued that reasonable expectations from the management had no impact on SISP success, because their expectations were merely to

see the SISP process generate successful payment systems in a specific timeframe. A SAIB IT manager said:

> *"According to the nature of the banking industry, which has to meet several requirements from international and national institutions, management expectations of SISP are very high. At the same time, the support of management allows us to work longer and hire experts whenever needed, so it had no impact on SISP success."*

A fourth factor which respondents considered to have had no impact on the success of SISP was the low turnover of key people throughout the. Two reasons were given: first, it was to be expected that people involved in SISP would be well paid and committed; secondly, consultants played important roles during the SISP process and were committed to the banks. A SAMA executive gave further clarification:

> *"We never think about turnover of key people during SISP process. People are well paid and we choose dedicated consultants. Accordingly, it had no impact on SISP success."*

Many participants also felt that close management control to resolve conflict among different organisational subunits had no impact on SISP success, because the function of close management was a prerequisite of starting the SISP process for the payment systems. Thus, an NCB business director stated:

> *"Resolving conflict among different organisational subunits by close management control was a must before even thinking about SISP, so it had no impact on SISP success."*

Another element which was found to have had no impact on SISP success was sufficient IS budget allocation. Participants explained that this was because IS budget allocation was a requirement in order to run the business of the bank and was addressed prior to starting the SISP process. A SAMA IT director said this:

> *"Sufficient IS budget allocation is one step before SISP and banks spend heavily on IS. As a result, it had no impact on SISP success."*

Finally, many of the participants from the three banks argued that the top managers' beliefs in the important role played by IS in the bank's ability to compete had had no impact on the success of SISP, because the ability to compete was not a core priority of SISP. An executive of NCB stated:

> *"The purpose of SISP for payment systems is to develop and implement advanced national payment systems for the whole country and not for banks to compete with each other."*

6.5 Functions of External Consultants in SISP in the Banking Sector

As discussed in the previous chapters, nine elements were found to govern the functions of the external consultants in applying SISP to the banking sector. In order to answer the fourth research sub-question (RQ4: 'What are the main functions of the external consultants' impact on the success of SISP in the banking sector?'), these nine elements were again categorised into three groups according to their relationship with SISP success, as suggested by the statistical analysis presented in Chapter 5 (Section 5.8): those which had positive, negative or no impact on SISP success. The following subsections discuss these in turn.

6.5.1 Element with a Positive Impacts on SISP Success

Only one element was found to have impacted positively on the success of SISP: the transfer of technology to the bank employees by external consultants. Participants explained that the consultant transferred technology and that employees transferred information about the bank's activities to the external consultant; therefore, they shared knowledge, experience and trust with each other, which created a fruitful atmosphere for the SISP process. The transfer of technology was launched through presentations, workshops and on-the-job training. An NCB executive explained this effect:

> *"A transfer of technology to the bank's employees by external consultants was required for SISP success and this was very clear to our external consultant, who was interested in working with us. We followed that up with our employees. This created a productive environment for the SISP process and had a positive impact on its success."*

6.5.2 Elements with Negative Impacts on SISP Success

Two elements were found to have impacted negatively on SISP success. Many participants felt that when the external consultant made many of the major decisions about IS in the bank, this had a negative impact because bank employees resisted these major decisions when presented by outsiders. In addition, some of these decisions might have favoured the external consultant's choices, such as software or hardware with which he was familiar. A SAMA IT director expressed the point simply:

> *"Mostly, major decisions that were made by the external consultant were resisted by the bank's employees because they didn't participate in them. This had a negative impact on SISP success."*

Another negative factor, according to participants, was that some external consultants had only an advisory role and contributed to decisions about IS only when invited. This had a negative effect on SISP success because the external consultant gave advice without understanding the complete SISP process. An NCB executive explained how this was avoided in the case of that bank:

> *"We hired external consultants, particularly from a prestige Western consultant company, from the early stage of developing SISP until implantation of it and provided him with all the information he needed. He was one of the SISP team members and involved intensely with the process. We knew in advance that if we didn't use him correctly, SISP would be negatively affected."*

6.5.3 Elements with No Impact on SISP Success

This third subsection addresses six elements which had no impact on SISP success. First, many participants said that when the external consultant explained the importance

of the study, this had no such impact, because it was a basic task for which the consultant had been hired. One of those making this point was a SAMA executive:

> *"We hired an external consultant, mainly experienced in the area of SISP, to explain the importance of the study, which we believe was the basic task that was expected from him, so it had no impact on SISP success."*

Secondly, the fact that the external consultants trained the bank employees in the methods used had no impact on SISP success. Many participants, including the following NCB IT manager, explained that this was because the external consultant's training was essential to starting the SISP process.

> *"If the external consultant did not train our employees on the methods used, which are normally developed by him, we would not be able to start SISP. As a result, it had no impact on SISP success."*

Participants also argued that the fact that the external consultant worked with the bank employees as a team member had no impact on SISP success, because for banks to initiate the SISP process, they had to ensure that the external consultant worked with their employees as a team member. An NCB executive clarified this point:

> *"We had to ensure from the early stages of SISP that the external consultant worked with our employees as a team member, otherwise we would not have a consultant. It was a prerequisite for starting SISP, so it had no impact on SISP success."*

A fourth factor which was found to have had no impact on SISP success was that the external consultants used qualified and experienced people. This was because it is common for banks to select external consultants who use qualified and experienced people, particularly for developing and implementing SISP, according to participants including this SAMA IT manager:

> *"External consultants who are hired for developing SISP in the banking sector use experienced and qualified people. We ensured that before we started. It was a precondition for starting SISP. Therefore, it had no impact on SISP success."*

Many participants also asserted that while the external consultants had provided adequate support to the IS in the banks, this had not affected SISP success, again because this was the minimum service expected from a consultant, as an NCB IT director said:

> *"In order to develop SISP in the banking sector, this required hiring external consultants who were highly experienced and qualified in IT, to provide adequate support to the bank. We ensured that before we started. This was a must to start SISP, so it had no impact on SISP success."*

Finally, many participants stated that the management of the banks viewed their external consultants as leaders of their IS initiatives; however, this still had no impact on SISP success, because the final decisions regarding the IS were taken by the banks' managers. A SAMA executive explained this:

> *"We appointed an external consultant, mostly experienced in the area of SISP with state-of-the art IT, to describe the benefits of using the latest software, hardware and communication. But the final decisions, choosing which would suit our needs, were for us to make. Thus, it had no impact on SISP success."*

6.6 External Contextual Factors Affecting SISP in the Banking Sector

As explained in Chapter 3, the main external contextual factors affecting SISP in the Saudi banking sector were national culture, government and public organisations, international institutions, competitors and partners. The specific elements of these external factors affecting SISP success were revealed by the statistical analysis in Chapter 5 (section 5.9). This section discusses the relationships between these elements and SISP success in order to answer the fifth research sub-question, RQ5: 'What are the main elements of SISP, in terms of the external contextual factors, which influence its success in the banking sector?'

6.6.1 National Culture

The main elements of national culture in the Saudi banking sector, as discussed in Chapter 3, were religion, language and male/female segregation in the work environment. None of these, according to the statistical analysis in Chapter 5 (section 5.9.1), was found to have had any effect, either positive or negative, on SISP success.

Many participants, who followed the Christian, Muslim, Hindu and other religions, asserted that religion had had no impact on SISP success in the Saudi banking sector, because it did not prevent banks from developing and implementing SISP and because SISP was not negative towards religion. A typical comment was made by an NCB executive:

> *"As Muslims, we believe that our religion and other religions do not stop us from planning in the area of IS. At the same time, SISP has nothing against religion, so it had no impact on SISP success."*

Language was also said to have had no impact on SISP success, because it was normal for banks to use both Arabic and English in their documentation, including manuals, contracts and forms. In addition, most bank employees spoke English and there were a number of foreign workers in the Saudi banking sector who could also speak English. A SAMA business director said:

> *"All our documents, forms, manuals and contracts are usually produced in Arabic and English. Also, bankers know English well. It is the international banking language. Thus, it had no impact on SISP success."*

Finally, the fact that there were many participants of both sexes indicated that gender segregation in the work environment had had no impact on the success of SISP.

Organisations within the Saudi banking sector would use the latest technology to communicate between males and females, as a SAIB IT director stated:

> *"Thanks to technology, it helps us to do our business and at the same time to respect our culture. Therefore, it had no impact on SISP success."*

6.6.2 Government and Public Organisations

As discussed in Chapter 3, the main government and public organisations in the Saudi banking sector are SAMA, the Ministry of Finance (MOF), Saudi Electricity and the Water Agency. The statistical analysis in Chapter 5 (section 5.9.2) indicates that SAMA had a positive effect on SISP success, MOF a negative effect and the other two organisations no effect at all.

6.6.2.1 The Positive Impact of SAMA on SISP Success

Many respondents declared that SAMA had had a positive impact on SISP success by convincing the entire banking sector of the importance of SISP in payment systems, through conferences, presentations and meetings and by inviting various pioneers in SISP to speak at these events. SAMA also led the SISP team, with the cooperation and participation of the banks, and totally financed the SISP payment system project, from development to implementation, with the expectation that it would recoup some of its investment from fees charged for using the systems. The objective of SAMA, as the central bank, was to supervise closely the flow of financial information. A SAMA executive, an IT director and a consultant provided detailed explanations of SAMA's role in applying SISP to the payment systems which were developed in 1998 and which had been frequently updated to the time of the survey (2009).

A SAMA executive offered this clarification of SISP as applied to the payment systems:

> *"We should underline how the SAMA initiative in the strategy of payment systems can impact positively on the various parties involved: a) individuals and companies will feel encouraged by the quality and convenience of modern technology-based facilities that provide for their day-to-day liquidity and commercial relationships, b) SAMA will be able to set information standards and benefit from automated controls, thus promoting an efficient processing environment for banks, c) the banking sector will be able to provide convenient Kingdom-wide access to a variety of new products and services, presently made available under a variety of processing options, and d) the Saudi economy will benefit from the trading thrust originating in the greater flexibility in time and place and the lower cost of banking transactions."*

A SAMA IT director gave further details:

> *"A common unified environment for the banks is indeed a good opportunity to sustain the credibility of the banking sector in Saudi Arabia. The centralised approach is not only a sound automation initiative but it also emphasises SAMA's strength as a unique industry forum. The technological trends call for a coordinated approach that will prevent banks from spreading their efforts over incompatible system solutions. The introduction of these industry services at SAMA will provide a set of standards by means of a consistent system foundation which will give the banks full access to a wide range of electronic transactions. Furthermore, current technology demands the close supervision of the flow of financial information by a government agency. This requirement stems from the introduction by virtue of the electronic media of highly dynamic variations and complexities for money supply, stock market quotes, currency positions and corporate risk. Lacking the appropriate technology would be a major handicap, almost like trying to lead the banking industry blindfolded through an intricate maze."*

Finally, a SAMA consultant added the following remarks:

> *"Common system objectives and information standards will allow all banks to join their efforts in a coordinated and cost-efficient manner, while still being able to differentiate among them. The centralised services will offer value-added functionality to the banks, which will bear the central costs. Banking technology may then become a self-funding organisation and should be given the authority to study and develop any industry system that may be required in the future. Thus, SAMA has had a positive impact on SISP success."*

6.6.2.2 The Negative Impact of MOF on SISP Success

The Ministry of Finance, according to many participants, had a negative impact on SISP success because decisions regarding its use of IS took too long to implement, as MOF executives took a conservative approach to using technology. A SAMA consultant made this clear:

> *"The management of MOF, as a government organisation, was very conservative and even reluctant to sign the minutes of meetings* [agreements] *with us that related to SISP. Until now* [2008] *most of their business has been manual."*

6.6.2.3 Elements with No Impact on SISP Success

Many participants said that Saudi Electricity and the Water Agency had had no impact on SISP success, because they were connected with almost everybody in the country who used water or electricity; they had bank accounts but the banks dealt with them like other customers, as a SAMA business director explained:

> *"Saudi Electricity and the Water Agency are big clients in the payment systems, but their banking transactions are similar to other clients' transactions, so they have had no impact on SISP success."*

6.6.3 International Institutions

Chapter 3 identified five international institutions which were involved with the operation of SISP in the Saudi banking sector: the International Monetary Fund (IMF), the Society for Worldwide Interbank Financial Telecommunication (SWIFT), the GCC, the World Bank and the BIS. Their impact on SISP success, as identified by the statistical analysis in Chapter 5 (section 5.9.3), is discussed next.

6.6.3.1 Institutions having a Positive Impact on SISP Success

Three international institutions—the IMF, the GCC and SWIFT—were found to have affected SISP success positively. First, many participants felt that the IMF had had a positive impact on SISP success in the Saudi banking sector by offering full guidance through its Committee on Payment and Settlement Systems (CPSS), which had wide experience of banking in advanced countries, as a SAMA executive explained:

> *"One example of the guidance of IMF is that the CPSS publishes reference works on payment systems in various countries, widely known as Red Books. We learned from this experience, which had a positive impact on SISP success."*

Many participants also identified SWIFT as having had a positive impact on SISP success, because its shareholders, managers and users were from banks worldwide; therefore it provided the proprietary communication platforms, products and services which allowed banks to connect and exchange financial information. In addition, it brought the financial community together by working collaboratively to shape market practice, define standards and consider solutions to issues of mutual interest. This was summed up by an NCB IT director:

> *"Being a member of SWIFT enables us* [banks] *to automate and standardise financial transactions, thereby lowering costs, reducing operational risk and eliminating inefficiencies from our operations. This has had a positive impact on SISP success."*

A SAIB consultant added:

> *"SWIFT brings the financial community together, therefore banks can create new business opportunities and revenue streams, so it had a positive impact on SISP success."*

The positive effect on SISP success of the GCC, according to many participants, arose from its stated objectives associated with the formulation of similar regulations in various fields, such as the economy and finance, encouraging cooperation in the private sector, strengthening ties between the people of the Gulf and establishing a common

currency. These objectives were said to help banks in the Gulf area to learn from one another's experiences in banking and, more specifically, in SISP. In addition, when one of the Gulf countries invited recognised speakers to discuss SISP, it was easy for the other countries to attend. A SAMA business director provided further clarification:

> *"In the GCC, it is simple to learn about experience and information on SISP in the banking sector from each other during the regular meetings between bankers, so the GCC has had a positive impact on SISP success."*

6.6.3.2 The Negative Impact of the WB on SISP Success

The World Bank was the only one of the five institutions which was perceived to have had a negative impact on the success of SISP. Many of the participants said that this was because its advisers, who were mainly advisers to the MOF, did not have enough experience in banking and IS; therefore, their advice on SISP in the banking sector was inappropriate, as a SAMA executive stated:

> *"The World Bank advisers are excellent in economics and statistics but were not experts in banking and information systems. Thus, they had a negative impact on SISP success."*

6.6.3.3 No Impact of the BIS on SISP Success

Participants felt that the BIS had had no impact on SISP success because its aims were to promote monetary and financial stability, to act as a forum for discussion and cooperation among central banks and the financial community and to serve as a bank for central banks and international organisations. The Saudi banking sector cooperates fully with the BIS and greatly respects it in the area of banking products and standards. At the same time, the BIS acts as a consultancy organisation in the area of IS for the banking sector. An NCB business director explained its lack of impact:

> *"We cooperate with all the decisions of the BIS and take into account its standards in banking products while we learned from them in the area of IS when needed. So, it has had no direct impact on SISP success."*

6.6.4 Competitors

The main competitors in the Saudi banking sector, as discussed in Chapter 3, were identified as insurance companies, real estate offices, national banks and foreign banks. This subsection discusses their impact on SISP success, as indicated by the statistical analysis in Chapter 5 (Section 5.9.4).

6.6.4.1 Elements with Positive Impacts on SISP Success

Participants said that foreign banks were the only competitors to affect SISP success in the Saudi banking sector positively; they did so because, particularly in the case of American and European banks, they were more advanced in SISP than Saudi banks. To illustrate, a SAMA executive explained:

> *"American and European banks are more advanced in IS strategic planning and cooperation, so we gain from them and this has had a positive impact on SISP success."*

6.6.4.2 Elements with Negative Impacts on SISP Success

There were no competitors that were found to have impacted negatively on SISP success.

6.6.4.3 Elements with No Impact on SISP Success

Many of the participants explained that insurance companies were the only competitor to have had no impact on SISP success, because they were still new in the Saudi Arabian financial market and their experience of SISP was too limited to provide any lessons. A SAIB IT director commented:

> *"Insurance companies are new competitors in the Saudi financial market and their experience in SISP is not enough to learn from, so they've had no impact on SISP success."*

6.6.5 Partners

The Central Bank, Visa, Master Card (MC) and American Express (AMEX) were identified as the main partners in the Saudi banking sector, as discussed in Chapter 3, but, according to the statistical analysis in Chapter 5 (Section 5.9.5), none of them had an impact on SISP success.

As many of the participants explained, the Central Banks had no impact on SISP success, because SAMA, as a central bank, was more advanced in IS than the central banks of other Arab and Muslim countries. In addition, SAMA initiated, developed, implemented and financed SISP in regard to payment systems for the entire banking sector, while other central banks worldwide let commercial banks do this. As a NCB executive explained:

> *"SAMA is advanced in IS in Arab and Muslim countries. At the same time, SAMA financed the entire project of SISP while other central banks did not. Therefore, it had a positive impact on SISP success."*

The participants tended to agree that Visa, MC and AMEX had had no impact on the success of SISP in the Saudi banking sector, because the sector was aware of software compatibility, hardware applicability and procedures before starting to apply SISP to its payment systems, as a SAIB IT director confirmed:

> *"The software and hardware of VISA, MC and AMEX were taken into account before we started SISP, so they had no impact on its success."*

6.7 External and Internal Measurements of SISP Success in the Banking Sector

As explained in Chapter 2, SISP success can be measured both externally (e.g. customers) and internally (e.g. management). The statistical analysis in Chapter 5 (Section 5.10) indicates that certain elements of external and internal measurement had an effect on SISP success. This section considers these effects, in order to answer the sixth research sub-question, RQ6: 'Which internal and external measurements of SISP impact on its success when utilised in the banking sector?'

6.7.1 External Measurements of SISP Success in the Banking Sector

The main external measurements of SISP success in the Saudi banking sector were found to be reducing the cost of services, improving service quality to the public and improving security. The statistical analysis in Chapter 5 (section 5.10.1), indicated that the first of these had a negative impact on SISP success, the second a positive effect and the last no effect at all.

6.7.1.1 Element with a Positive Impact on SISP Success

Participants suggested that improving service quality to the public affected SISP success positively because such improvement sustained bank customers' confidence and was essential for gaining competitive advantage, as an NCB executive explained:

> *"To deliver service quality to the public is a winning strategy. It sustains our customers' confidence and trust in our payment systems. This is the public measurement of our SISP success, so it had a positive impact on SISP success."*

6.7.1.2 Element with a Negative Impact on SISP Success

Many of the participants from the three banks explained that reducing the cost of services affected SISP success negatively, because such cost reductions were often counterproductive to efficiency. A SAIB business director explained:

> *"Practically, in the banking sector, reducing the cost of services means less quality, so it would be unhelpful if SISP successes were measured by cost reductions. Therefore, it would have a negative impact on SISP success."*

6.7.1.3 Element with No Impact on SISP Success

According to many participants, improving security had no impact on SISP success. Security in banks is essential for the banking industry; therefore the banks had ensured security in all of their systems before starting SISP, ensuring that these systems were activated. A SAMA IT director clarified this point:

> *"Improving security is a must for our business and SISP ensures the security systems are functioning. But it is hard for the public to measure our SISP success by improving security, because security comes before SISP in our industry. Thus, it had no impact on SISP success."*

6.7.2 Internal Measurements of SISP Success in the Banking Sector

The main elements of the internal measurement of SISP success were reducing cost, increasing profit and improving market share. The last of these was found to have had a positive impact on SISP success, while the others had none, as indicated by the statistical analysis in Chapter 5 (Section 5.10.2).

6.7.2.1 Element with a Positive Impact on SISP Success

Many participants felt that improving market share had had a positive impact on SISP success because it is a long-term strategic objective of the banking industry; therefore,

the real success of SISP as a strategy is measured by the observed improvement in market share, as an NCB executive explained:

> *"Improving market share is a long-term strategic objective for our industry. This is not only between commercial banks but also between cash and electronic money. Thus, improving market share is the most suitable measurement of SISP success. Also, it is an indicator of SISP success."*

6.7.2.2 Elements with No Impact on SISP Success

The remaining two elements in this category were found to have had no impact on SISP success. According to participants, cost reduction had no impact because, in general, it is a short-term objective in the banking industry and banks are experts in controlling their costs. A SAIB IT manager clarified this:

> *"We* [banks] *have a formal cost review process which identifies crucial areas where costs can be prevented or reduced. In addition, cost reduction is a short-term objective and sometimes it can be used as a tactic, so it would not be an accurate measurement of SISP success in our industry. Thus, it had no impact on SISP success."*

Participants also considered that increasing profit had had no impact on SISP success, because in the banking sector it can be achieved in many ways, such as by increasing banking product volumes, increasing product prices or reducing the costs of these products, all of which could themselves affect SISP. Therefore increasing profit is not an appropriate measurement of SISP success, according to an NCB business director:

> *'In the banking sector, it is far from practical to measure SISP success by increasing profit. This is because there are many ways of increasing profit, such as increasing the values or volumes of our products or reducing the cost. So it had no impact on SISP success.'*

6.8 Key Stakeholders' Roles in SISP in the Banking Sector

The key stakeholders of SISP in the banking sector identified in previous chapters were executives, business user directors and managers, IT directors and managers, and

external consultants. Each stakeholder had his/her own role in SISP, whether to initiate, lead, be involved, spend time or exert power, which could directly influence its success. This section examines respondents' views of the relationships between these roles and SISP success, in order to answer the seventh research sub-question, RQ7: 'Which key stakeholder roles (initiating, leading, involving, spending time and exerting power) impact on the success of SISP in the banking sector?'

6.8.1 Executives' Roles

Two of the executives' roles in SISP in the Saudi banking sector, to initiate and to be involved, were shown by the statistical analysis in Chapter 5 (Section 5.11.1) to have had a positive impact on SISP success, while leading and exerting influence and power had no such effect.

6.8.1.1 Elements with a Positive Impact on SISP Success

First, many participants considered that the initiating role of executives had had a positive impact on SISP success, because before executives initiate SISP, they would usually take opportunities related to their positions to discuss with various people their experiences and the challenges they faced when developing and implementing SISP in their organisations. Therefore, they were aware of the whole picture prior to starting. When these executives initiated SISP, they provided full support, because success would add to their achievements; furthermore, the executives who initiated SISP were normally using strategic thinking, so they were able to motivate their subordinates to achieve it successfully. A SAMA IT director provided clarification:

> *"Of course, SISP will succeed when initiated by executives. Executives know the full story of SISP and what they are talking about. They have the chances to meet with many experts nationally and internationally during*

> *meetings and conferences to talk about SISP. Also, when they have initiated SISP, it carries their names and successes. Executives who initiated SISP are really strategists and know how to motivate bankers to succeed."*

The second executive role which participants from the three banks saw as having had a positive impact on SISP success was involvement. By becoming involved in SISP, executives sent a message to bank employees in general and to the SISP team in particular that SISP was a critical issue for the bank, making it more likely to succeed. During the SISP process, most of the team members exerted extra energy when the executives were seen to be working with them and this added value to the SISP achievements. At the end of the process, the team members normally expected a reward from the executives if SISP was achieved successfully. An NCB business director confirmed this:

> *"In our banking sector, the involvement of executives in SISP means SISP is an important issue for banks. And we work harder when executives are working with us. Habitually, at the final stage, we get recognition. All previous actions of executive involvement lead to SISP success."*

6.8.1.2 Executive Roles with No Impact on SISP Success

The remaining two elements within this group both failed to have an impact on SISP success. First, many participants stated that executives' leadership role had had no impact on SISP success, because leading SISP is a full-time job and executives' time was limited; thus, they delegated their leadership of the SISP team to IT or business directors, as a SAIB IT director explained:

> *"In practice, executives in banks delegate their leadership of SISP to someone they trust, mainly an IT director or one of the business directors. This is because they don't have the time for this full-time job. Therefore, executives' leadership of SISP had no impact on its success."*

Similarly, according to many participants, executives' exerting of influence and power had had no impact on SISP success, because they did not need this to develop and implement SISP; however, they would sometimes listen to the views of team members or solve unexpected problems, as a SAMA business director explained:

> "*As a matter of fact, executives in banks exert influence and power in SISP only to resolve an unforeseen crisis or to solve a problem between the team members, so the influence and power exerted in SISP by executives had no impact on its success."*

6.8.2 Business User Directors' and Managers' Roles

Like those of executives, none of the roles of business user directors and managers in SISP had a negative impact, but initiating and involvement had positive effects, while leading, spending time and exerting influence and power had no effect on SISP success, according to the statistical analysis in Chapter 5 (Section 5.11.2).

6.8.2.1 Roles with a Positive Impact on SISP Success

Many participants said that the initiation role of business user directors and managers had a positive impact on SISP success, because they were familiar with the needs of the business and when they initiated SISP, they did so in order to serve the bank's business interests. In addition, they convinced top managers, IT directors and other business directors through their initiations, which passed through several phases of investigation. In general, the banks usually achieved reasonable success with SISP. During its development and implementation, the business user directors and managers acted as the owners of SISP and pushed for its success. A NCB IT director explained this process:

> *"In banks, business user directors and managers need to market their initiating. They present their initiated SISP during one-to-one meetings with seniors or by inviting heads of the departments to presentations. When SISP is approved, they drive it like lightning. Latterly, they have got credit.*

Because of all their efforts, their initiating has had a positive impact on SISP."

Participants also said that the involvement of business user directors and managers had impacted positively on SISP success, because they knew the details of their banks' business and when involved in SISP they were able to provide experience-based recommendations and resolve any business-related problems during the development and implementation of SISP. Thus, a SAMA business manager stated:

"In the Saudi banking sector, business user directors and managers are well trained and expert in the banking industry. So, when they are involved in SISP they give knowledgeable information and assist in solving day-to-day troubles."

6.8.2.2 Roles with No Impact on SISP Success

The remaining three elements were found to have had no impact on SISP success. First, in relation to the lack of impact of leadership, participants explained that SISP was near to IS expertise; therefore business user directors and managers who led SISP generally relied on the IT directors or consultants. As a result, their leadership had no impact on SISP success, as a SAMA business director explained:

"We strongly believe SISP has to be led by a person with IS experience. Thus, when business user directors and managers lead SISP, they rely heavily on a person who has experience in the IS area and their leadership has had no impact on SISP success."

Secondly, participants stated that business user directors' and managers' spending time on SISP had no impact on its success, because this time was generally spent in explaining their work in detail, answering questions about their work or examining some functions relating to their work. Therefore what was important was not the amount of time spent but rather how precisely this time was spent. A SAIB IT manager made this clear:

> *"In SISP, some business user directors and managers spend more or less time than others in explaining their work in detail, in relation to their experience, education and personality. Thus, it is not how long but how precisely the time is spent in SISP by business user directors and managers. Here, spending time had no impact on SISP success."*

Many participants also argued that the exerting of influence and power by business user directors and managers had had no impact on SISP success in the Saudi banking sector, because it was normal for them to participate in the development and implementation of SISP. Furthermore, if anyone tried to exert too much influence or power over SISP, the others would prevent this, because it could affect their business. In addition, the executives would not agree who could exert influence and power, because SISP would affect the entire bank. A SAMA consultant's view on this was:

> *"Since many business user directors and managers contribute to SISP development and implementation, it is hard for any one of them to exert influence and power. Also, executives in the bank will not agree with whoever tries to exert influence and power. Exerting this influence and power had no impact on SISP success."*

6.8.3 IT Directors' and Managers' Roles

As discussed in the previous chapters, the main roles of the IT directors and managers were the same as those of business user directors and managers. This time, however, leading and spending time had positive effects, exerting influence and power had a negative impact and initiating and involvement had no effect on SISP success, as derived from the statistical analysis in Chapter 5 (section 5.11.3).

6.8.3.1 Roles with a Positive Impact on SISP Success

Many of the participants identified leadership as positively impacting on SISP success, because SISP was linked to IS in the Saudi banking sector. A person who understood technology, such as software, hardware and communications, was needed, so the IT

director was a suitable person to lead SISP. Of course, the IT director should know the nature of the bank's business; this can normally be gained from presentations and meetings with business directors. Often there is only one IT director at a bank, while there are often many business directors; this makes the choice of IT director to lead SISP easier and encourages acceptance and support from the other business directors, as an NCB executive made clear:

> *"SISP in our industry needs a person who has the capability to talk to technical people and at the same time understand the banking industry. We have only one IT director and when we choose him/her, the business directors will not protest. Thus, the IT director is the right one to lead SISP and move it to success."*

It was explained by many participants from the three banks that IT directors' spending time had also impacted positively on SISP success, because time spent with the banks' executives during the development and implementation of SISP, to obtain their views on the future, was valuable. They would also spend time with business directors to discuss the business needs of the bank, with consultants to review accomplishments and with vendors to discuss the availability and maintainability of the software, hardware and communications within the country. Therefore, the more time the IT directors spent on SISP, the greater its success and impact would be, according to a SAIB IT director:

> *"To drive SISP successfully in our industry, the IT director spends time with executives to discuss what is next, with business directors to discuss business needs, with consultants to inspect SISP achievements and with vendors to investigate the software, hardware and communications."*

6.8.3.2 Role with a Negative Impact on SISP Success

Participants from the three banks considered that the exerting of influence and power by IT directors impacted negatively on SISP success because they exerted such influence and power by disregarding the business needs of the business directors and managers.

They also chose software such as databases or programming languages because it was familiar to them, without asking about how available and maintainable it would be in Saudi Arabia; the consequence was unsuccessful SISP, as a SAMA business director explained:

> *"During SISP development and implementation, normally the IT director is near to the decision makers in the bank, which sometimes gives him the opportunity to exert influence and power. The common actions of exerting influence and power are ignoring others directors' ideas or choosing software or hardware they like without studying them carefully. SISP will be moved away from reaching its business objectives."*

6.8.3.3 Roles with No Impact on SISP Success

Two of the IT directors' roles failed to affect the success of SISP. The first of these, according to many participants, was initiation, because initiating SISP in the Saudi banking sector was one of the main responsibilities of the IT director, who had to maintain it whenever it was needed. An NCB consultant explained:

> *"SISP is a continuous process and IT directors have to initiate it whenever there is a need. This is the IT director's main job. On the other hand, initiating it does not guarantee its success."*

Many participants also felt that the IT director's involvement role had no impact on SISP success, again because it was essential for SISP, since there was only one IT director in each bank. A SAIB IT director confirmed this:

> *"Normally, there is only one IT department at the bank, so the IT director's involvement is necessary. At the same time, this involvement does not guarantee SISP success."*

6.8.4 Consultants' Roles

As discussed in the previous chapters, consultants were found to have the same five main roles as IT directors. Again, the statistical analysis in Chapter 5 (section 5.11.4

indicated that the effects on SISP success of two of these roles were positive and those of two others negative, while the last had no impact.

6.8.4.1 Roles with a Positive Impact on SISP Success

The first of the roles of consultants which was found to have had a positive impact on SISP success in the Saudi banking sector was initiating, because the consultants initiated SISP and this added value to the banking sector; they applied their worldwide experiences of the banking industry and banking technology to form a successful SISP, as a SAMA IT manager stated:

> *"When consultants initiate SISP, they will make it work. They have the experience and international reputations in banking technology."*

Many participants also considered that the involvement of the consultants had a positive impact on SISP success, because it helped to transfer technology and international banking experience to the SISP team members. Consultants would use their experience to foresee difficulties in SISP and develop appropriate solutions, as a SAMA executive affirmed:

> *"The involvement of our consultants is valuable and guides SISP to success. They have extensive worldwide experience in banking technology and know how to deal with SISP problems, and we make sure they transfer technology to our employees."*

6.8.4.2 Roles with a Negative Impact on SISP Success

Participants felt that consultants' leadership role had had a negative impact on SISP success. When consultants, particularly external ones, led SISP in a bank, the business and IT directors would resist and might feel that their rights have been denied. The extent of cooperation among the SISP team members would decline sharply;

consequently, SISP would tend to move in the opposite direction from its success. An NCB IT director asserted:

> *"Consultants have the experiences in banking technology, but they don't know the employees and the politics between them. We can do the job* [leading] *better."*

A SAIB business director provided further clarification:

> *"Consultants don't understand the internal environment of the bank and rely on what we give them for information. And what is wrong with us."*

The second role of consultants which, according to many participants, had a negative impact was the exerting of influence and power, because they would sometimes exercise this role when selected or recommended by executives or when they had worked for the bank for a long time and formed an agreeable relationship with the top management. They exerted influence and power on SISP by convincing the decision-makers to take action, for instance to move one of the team members from the SISP project without a valid reason, or to choose software or hardware simply because it was familiar to them, but without investigating whether it was available and maintainable in Saudi Arabia. The consequences for SISP would be negative, according to a SAMA IT director:

> *"Rarely, in the banking sector, consultants exert influence and power on SISP when they apply top management trust in them imperfectly. An example of exerting influence and power is taking some decisions for political reasons and not for professional ones. In this case, SISP will be less likely to achieve success."*

6.8.4.3 Role with No Impact on SISP Success

The last role of consultants, spending time, was considered to have had no impact on SISP success, because SISP did not simply require large volumes of time but rather volumes of quality time, which adds value. An NCB IT manager shed light on this:

> *"Consultants spend a great amount of time on SISP but not all of the time is productive. Sometimes, consultants employ the time in order to train their new employees, to understand some of the bank products and learn more about the banks' structure. So there is not really any impact on SISP success."*

6.9 SISP Triggers in the Banking Sector

The final set of factors to be considered in this chapter is that of SISP triggers. As discussed in the previous chapters, the main elements under this heading are the appointment of new executive/s, changes in technology, changes in organisational structure, cost pressures, the need to improve IS performance, changes in corporate business strategy and failure in the last project/s. This section discusses the impact of these elements on SISP success, based on the statistical analysis in Chapter 5 (section 5.12), in order to answer the eighth research sub-question, RQ8: 'Which SISP triggers impact on the success of SISP in the banking sector?'

6.9.1 Elements with Positive Impacts on SISP Success

There were two elements which were found to have impacted positively on SISP success. The first, according to many participants, was recognising the need to improve IS performance as a SISP trigger, because it helped to provide an understanding of what was actually happening in the IS throughout the entire bank. In addition, the importance of improving IS performance was greater when the bank employees participated and were educated. A SAMA IT director clarified this:

> *"Recognising the need to improve IS performance as a SISP trigger in banking helps to ensure that the most important applications get priority. It ensures that all hardware is fast enough for the job. Poor performance can occur as a result of bad user behaviour and improved IS performance gets the bank employees onside through participation and education, rather than imposing harsh standards and technical lockdowns. So an emphasis to improve IS performance as a SISP trigger had a positive impact on its success."*

Secondly, many participants felt that changes in corporate business strategy had a positive impact on SISP success as a trigger, because the shift from cash to electronic money in Saudi payment systems was linked with the changes in the corporate business strategy throughout the entire banking sector. SISP was developed and implemented to achieve these changes; therefore, these changes in corporate business strategy, which affected the entire sector, had driven the success of SISP. A SAMA business director commented:

> *"Switching from cash to electronic money in our payment systems was our new corporate business strategy. All the energy of the banking sector was available to achieve that. SISP was developed and implemented to accomplish these changes and it succeeded."*

6.9.2 Elements with Negative Impacts on SISP Success

Three SISP triggers were found to have impacted negatively on SISP success, the first being changes in technology, because such changes occur almost every day; therefore, if they were to act as SISP triggers, SISP would never be accomplished, as a SAMA consultant made clear:

> *"Changes in technology should not be a SISP trigger in the banking sector. These changes are happening daily, so SISP would be an endless project. Certainly, we have to take the technology direction into account when we start SISP and upgrade the hardware and update the software."*

Secondly, many participants identified cost pressures as a SISP trigger with a negative impact on success, because such pressures forced the SISP team to choose certain products, such as hardware or software, not for quality but in relation to price. In addition, cost pressures can lead to the choice of a consultant who has limited experience in SISP development and implementation. On this, an NCB IT director explained:

> *"Cost pressures affect the quality of the people that we choose as consultants. It affects the quality of training programmes for SISP team members. At the same time, it affects the quality of SISP products in the banking sector."*

Thirdly, many participants identified failure in the last project/s as a SISP trigger which impacted negatively on success. Such failure would remain in the memories of the bank employees, would affect their future decisions and might even stop them from performing well. Therefore, the fear of failure could generate inappropriate decisions which could take SISP in a negative direction, so past failures should not be taken as a SISP trigger. A SAMA IT director put it this way:

> *"Failure in the last project should not be taken as a SISP trigger in the banking sector. Failure will be like a shadow over all of the team members' decisions. It might lead to SISP failure."*

6.9.3 Elements with No Impact on SISP Success

Two potential triggers were viewed as having had no impact on SISP success, the first being the appointment of new executive/s, because a new executive would need a long time to become familiar with the banking environment in order to start a SISP project. An NCB consultant made this clear:

> *"SISP success will not be affected by a new executive who has been appointed. A new executive needs a reasonable period of time to understand the work environment of the bank."*

Finally, participants felt that changes in organisational structure had not affected SISP success, because SAMA was the main player in SISP, because SISP development is very flexible and because any bank could adopt SISP processes at any time. A SAIB IT director explained this:

> *'With the cooperation of commercial banks, SAMA, which is the central bank of the country, initiated, developed and implemented SISP in the Saudi banking sector. Mergers between banks have occurred and foreign*

partners take their investment out of the country, but SISP successes will not be affected.'

6.10 Summary

This chapter has reiterated and explained the results of the statistical analyses presented in the previous two chapters, in order to answer the main research question and its eight research sub-questions (RQ1-RQ8). The backgrounds of the three disparate banks surveyed were explained in detail, because the experiences of all three organisations was important to explore the process of implementing SISP in the banking sector.

The objectives of the SISP projects in the three banks and the impact of SISP achievement on SISP success were discussed. The internal contextual factors affecting SISP and their impact on SISP success were then identified and the contextual factors external to SISP were also investigated. The next section examined the impact of external and internal measurements of SISP success and the chapter continued by reviewing the impact of key stakeholders' roles and SISP triggers on its success in the banking sector.

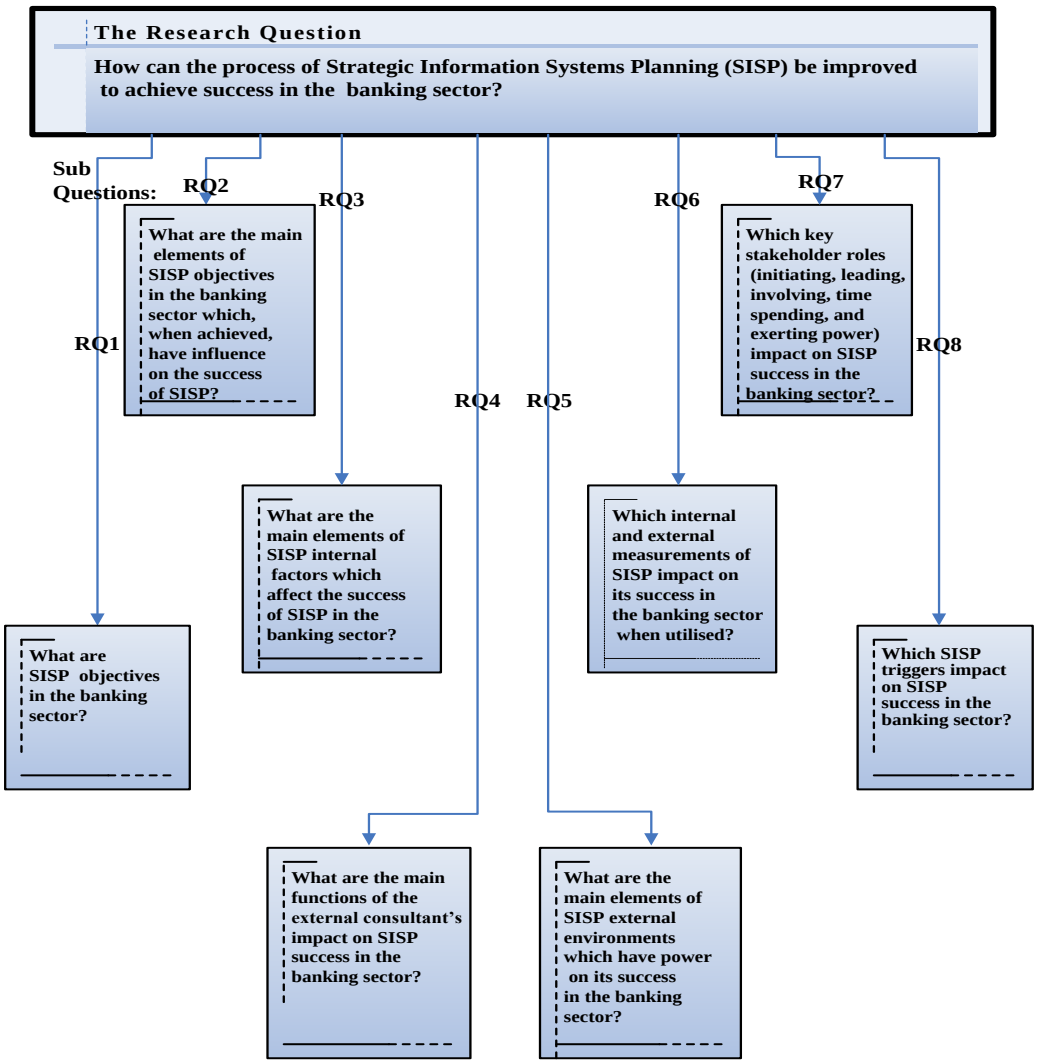
All of the findings identified in this chapter will be discussed thoroughly, with the related findings from Chapter 5, in the research findings and discussions of Chapter 7, which follows.

CHAPTER 7
Research Findings and Discussions

7.1 Introduction

This chapter interprets and discusses the findings generated from the results of the quantitative analysis in Chapters 5 and the qualitative analysis in Chapter 6. The aim was to answer the main research question by answering the eight sub-questions (RQ1-RQ8), summarised in Figure 7.1. In addition these findings are reviewed alongside previous work in this field.

Figure 7.1: Research Questions



This chapter is organised as follows. The findings of SISP objectives in the banking sector, which relate to RQ1 and RQ2, are discussed in section 7.2. The following sections will then explain the findings in terms of the relationships between the elements of the remaining research sub-questions and SISP success. Section 7.3 will explain SISP internal contextual factors in the banking sector which relate to RQ3; the functions of external consultants in SISP in the banking sector which relate to RQ4 will be explained in section 7.4 and SISP external contextual factors in the banking sector which relate to the answer for RQ5 will be presented in section 7.5. The remaining sections of the chapter (sections 7.6 to 7.8) will review the following: the external and internal measurements of SISP success in the banking sector related to the answer for RQ6; the key stakeholders' roles in SISP in the banking sector related to the answer for RQ7; and, the SISP triggers in the banking sector related to the answer for RQ8. Finally, a chapter summary will be presented in section 7.9.

7.2 SISP Objectives in the Banking Sector

The following sections will discuss the findings of SISP objectives and the impact of SISP achievement on SISP success, in accordance with RQ1 and RQ2.

7.2.1 SISP Objectives

RQ1: *What are the SISP objectives in the banking sector?*

Table 7.1 shows the SISP objectives, sequenced by the extent to which they were appropriate to the banking sector. A five-point Likert scale was used to measure each objective; the mean of all the objectives was greater than 3.00 and fell between 3.13 and 4.14.

Table 7.1: SISP Objectives and Representative Authors

Symbol	SISP Objectives and Representative Authors	Mean	Mean Rank
Obj2	Align IS with business needs (Brown and Magill, 1994; Daz and Zahra, 1991; Flynn and Goleniewska, 1993;King, 1978; Reich and Benbasat ,1996 ;Teo, 1994)	4.14	1
Obj4	Understand strategic priorities of top management (Kunnathur and Shi, 2001; Segars and Grover, 1998)	3.97	2
Obj1	Identify strategic applications which are helping bank to achieve its goals (Earl, 1993; Flynn and Goleniewska, 1993; Sullivan, 1985)	3.89	3
Obj8	Increase top management commitment to IS (Earl, 1993; McLean and Soden, 1977)	3.87	4
Obj10	Envisage the future opportunities and prepare for the future (Kunnathur and Shi, 2001; Segars and Grover, 1998)	3.83	5
Obj17	Develop technology policies and architecture (Earl, 1993; Galliers, 1987; Sullivan, 1985)	3.66	6
Obj7	Improve communication about IS with users.(Galliers, 1987; McLean and Soden, 1977; Gottschalk, 1999b)	3.65	7
Obj9	Generate new ideas to reengineer business processes through IS(Kunnathur and Shi, 2001; Segars and Grover, 1998)	3.58	8
Obj6	Increase visibility of IS in the organisation (Galliers, 1987; McLean and Soden, 1977; Selig, 1991)	3.52	9
Obj13	Forecast IS resource requirements (Gottschalk, 1999b; McLean and Soden, 1977)	3.52	10
Obj16	Define new business strategies or modify existing ones (Porter, 1985)	3.50	11
Obj15	Facilitate management and control of IS resources (Boynton and Zmud ,1987; Carter et al., 1990; Green, 1991)	3.48	12
Obj14	Allocate IS resources. (Bowman et al, 1983; Selig ,1991)	3.43	13
Obj3	Adopt or match goals of IS to change goals of bank. (Segars and Grover, 1998)	3.32	14
Obj11	Identify IS applications (Kunnathur and Shi, 2001; Segars and Grover, 1998)	3.27	15
Obj5	Gain a competitive advantage from IS. (Galliers, 1987; Hartog and Herbert, 1986; Hochstrasser and Griffiths, 1990; Kettinger et al, 1994)	3.17	16
Obj12	Identify new and higher payback applications. (Galliers, 1987; McLean and Soden, 1977; Moynihan, 1990)	3.13	17

The major findings from the questionnaire in Chapter 5 (section 5.4.1) were confirmed by the interviews in Chapter 6 (section 6.3.1); therefore, all 17 SISP objectives were compatible in the Saudi banking sector. This thus indicates that the objectives of SISP in various industries and from several countries, by several authors, are applicable to the banking sector in Saudi Arabia – a single industry 'banking', in one country 'Saudi

Arabia'. In addition, these results support the findings of all the representative authors on SISP objectives presented in Table 7.1. This provides evidence to suggest that these are the main and universal objectives of SISP. In this research, as shown in Table 7.1, 'Align IS with business needs' has the highest mean of 4.14 and is ranked first, while 'Gain a competitive advantage from IS' has a mean of 3.17 and is ranked 16th. This shows the importance of IS alignment with business needs as an objective of SISP in the banking sector; in contrast, gaining a competitive advantage is close to the bottom of the table.

This evidence provides strong support for Earl's (1993) finding on alignment, while it is different from the finding on competitive advantage. Earl found that IS executives ranked the top two planning objectives as being the alignment of IS with business strategies and the identification of opportunities for IS-based competitive advantage. Competitive advantage is the second to lowest in Table 7.1 because SAMA, as the central bank, led, financed, developed and implemented SISP for the payment systems with the cooperation and participation of banks; however, because it was a national project, this did not leave room for any banks to compete in IS. This can explain the roles that can be played by the central bank of the counry in developing and implementing SISP.

In order to have practical and achievable SISP objectives for the banking sector, this research used factor analysis, as explained in Chapter 5 (section 5.4.2), a technique which can reduce the number of factors/objectives. As a result, the original 17 SISP objectives were reduced to five new objectives, as shown in Table 7.2.

Table 7.2: New SISP objectives

Factor name	Variables
Planning and deployment of IS	Allocate IS resources
	Facilitate the management and control of IS resources
	Identify IS applications
	Identify new and higher payback applications
	Identify strategic applications which are helping the bank to achieve its goals
Leading organisational changes	Generate new ideas to reengineer business processes through IS
	Envisage the future opportunities and to prepare for the future
	Define new business strategies or modify the existing ones
Improving stakeholder involvement and communication	Improve communication about IS with users
	Increase visibility of IS in the organisation
	Increase top management commitment to IS
Achieving strategic priorities	Adopt or match the goals of IS to change goals of the bank
	Understand strategic priorities of top management
	Gain a competitive advantage from IS (e.g. more market share)
Aligning organisational policies and architecture for business and IS	Develop technology policies and architecture
	Align IS with business needs
	Forecast IS resource requirements

The new SISP objectives are: 1) planning and deployment of IS; 2) leading organisational changes; 3) improving stakeholder involvement and communication; 4) achieving strategic priorities; and 5) aligning organisational policies and architecture for business and IS. The impact of the achievement of these new objectives, on SISP success, will be discussed in the next section.

7.2.2 Impact of Achievement of Objectives on SISP success

RQ2: *What are the main elements of SISP objectives in the banking sector which, when achieved, influence the success of SISP?*

This research has identified significant relationships between the achievement of SISP objectives and SISP success. The statistical analysis results indicate that the five variables of objective achievements together influence SISP success as explained in Chapter 5 (section 5.6).

For further investigation, the present research aims to test whether each of these variables affects SISP success in the banking sector. To determine whether it has a positive or negative effect, the multiple regression analysis techniques, which were explained in Chapter 5 (section 5.6) and confirmed by interviews in Chapter 6 (section 6.3), will be used.

The results, as shown in Table 7.3, indicate that 'Leading organisational changes', 'Improving stakeholder involvement and communication' and 'Achieving the strategic priorities' significantly affect the SISP success, positively, in the banking sector. In contrast, 'Planning and deployment of IS' and 'Aligning organisational policies and architecture for business and IS' do not significantly affect it. The following paragraphs will discuss firstly, the three achievements with significantly positive influences on SISP, and secondly, the two which have no impact.

Table 7.3: SISP Objectives Achievements and SISP Success

New SISP Objective	**Relationship between SISP Achievements and SISP success**	
	Significant Positive x/Negative(x)	**Non-Significant**
Planning and deployment of IS.		x
Leading organisation changes.	x	
Improving stakeholder involvement and communication.	x	
Achieving the strategic priorities.	x	
Aligning organisational policies and architecture for business and IS		x

The first finding concerns the achievement of 'Leading organisational changes', which significantly positively affects the SISP success in the banking sector including Saudi one. This occurred through the transition of the financial transactions from 'cash-based' to 'electronic-based'. SISP succeeded when this essential objective for the payment systems was achieved. In practice, change is a fact of business life and the way people adapt to change can mean the difference between achieving objectives and falling short (Sheppard Moscow, 2008).

The second finding concerns the achievement of 'Improving stakeholder involvement and communication', which significantly and positively affects SISP success in the Saudi banking sector. It has been repeatedly suggested that involvement in IS design is very important for the success of a system (Mumford and Weir, 1979; Mumford, 1983; Wong, 1994; Flechais and Sasse, 2009); therefore, this achievement made the SISP project each employee's own project. This finding supports the work of Flechais and Sasse (2009), which indicates that the process of socio-technical design is fundamentally a communication exercise between the different stakeholders in the system; without effective communication, the relevant design information, such as requirements, constraints or necessary discussions, would be impossible.

The third finding is that the achievement of 'Achieving the strategic priorities' positively impacted on the SISP success in the banking sector including Saudi one. This helped the banking sector to define which system to start with. As an example, first, the management information systems (MIS) and automated clearing were developed to run internal business and then the Saudi payments network (SPAN) and the Saudi Arabian Riyal Interbank Express (SARIE) were presented to connect SAMA with the other

banks. Afterwards, the SADAD payment system (SADAD) was obtained for national electronic bill presentation and payment. Finally, Tadawul, the Saudi stock market system, was introduced to be the only stock exchange in Saudi Arabia.

These three SISP objectives positively impacted on SISP success; however, the remaining two achievements had no impact on SISP success and these will now be discussed in turn.

The first finding is that the achievement of 'Planning and deployment of IS' had no significant affect on SISP success in the banking sector including Saudi banks. This is a fundamental issue for the banking sector since the banks rely heavily on IS in their activities and it is a pre-requisite to starting SISP. At the same time, banks cannot conduct business, in a modern and current way, without planning and deploying IS; therefore, it is not only a SISP objective but also a banking industry objective. Its achievement is a banking industry success before it becomes a SISP success; in other words, it is a macro objective for bank success and a micro objective for the success of SISP.

The second finding concerns the achievement of 'Aligning organisational policies and architecture for the business and IS', which had no significant affect on the SISP success in the banking sector. It was in fact achieved before developing SISP in the sector. SISP for payment systems are similar for banking industries worldwide, therefore the Saudi banking sector learned from the experiences of some advanced Western countries such as the USA, the UK and others which developed and implemented SISP for payment systems within their banks. At the same time, the Saudi banking sector, as many banks around the world, used external consultants with

experience of developing and implementing these advanced SISP technologies in international banks.

7.3 SISP Internal Contextual Factors in the Banking Sector

RQ3: *What are the main elements, the internal contextual factors, of SISP which affect the success of SISP in the banking sector?*

As discussed in Chapter 2, the major SISP internal contextual factors concern the availability of business strategy, alignment of IS strategy with business strategy, team members of SISP, management commitment and management support.

This research has identified significant relationships between SISP internal factors and SISP success using ANOVA and multiple regression analysis techniques, as explained in Chapter 5 (section 5.7) and confirmed by the interviews in Chapter 6 (section 6.4). In accordance with the third research question, the results of these relationships will now be discussed.

7.3.1 Availability of business strategy in banking sector

The statistical analysis results (section 5.7.1) indicate that the three variables of the availability of the business strategy together influence SISP success in the banking sector. This supports the study by Earl (1993), who examined SISP experiences in 27 UK companies, among which were banks, and found that business strategy availability was one of the five SISP success factors.

For further investigation and in accordance with RQ3, the current research examined whether each of these variables affects SISP success in the banking sector to determine its direction, either positive or negative. The findings, in Table 7.4, show that the only element of business strategy availability which positively and significantly influences SISP success is 'Professional banking staff know the business of the bank'.

Table 7.4: Availability of Business Strategy and SISP Success

Availability of business strategy elements	**Relationship with SISP's success**	
	Significant Positive x/Negative(x)	**Non-Significant**
Professional banking staff know the business of the bank	x	
Professional banking staff are aware of the bank's partners.		x
Professional banking staff are aware of bank competitors		x

The main contributors in the SISP team projects were drawn from bank business areas, such as directors, managers and employees, to provide guidance throughout the project in specific functional areas and to utilise in-depth knowledge and expertise. Therefore it is essential for professional banking staff to know the business of the bank.

7.3.2 Alignment of IS strategy with business strategy in banking sector

The statistical analysis results (section 5.7.2) indicate that the 12 variables of the alignment of IS strategy with business strategy together influence SISP success in the Saudi banking sector. This provides strong support for Earl (1993), who found that IS executives ranked one of the top two planning objectives as being the alignment of IS with business strategies.

The current research further investigated whether each of these variables affected SISP success in the banking sector, while also determining in which direction (positive/negative). The findings, displayed in Table 7.5, show that six of the main elements of alignment of IS strategy with business strategy positively impact on SISP: one had negative impact and five had no impact.

Table 7.5: Alignment of IS Strategy with Business Strategy and SISP Success

Alignment of IS Strategy with Business Strategy Elements	Relationship with SISP Success	
	Significant Positive x/Negative(x)	Non-Significant
IS staff are able to keep up with IT advancements.	x	
Business goals and objectives are made known to IS management.	x	
The IS department is responsive to user needs.	**(x)**	
IS management is knowledgeable about business.		x
Top management has confidence in the IS department.		x
The IS department provides efficient services.		x
The IS department provides reliable services.	x	
There is frequent communication between users and the IS department.		x
Business and IS management work together in prioritising application development.	x	
Top management is knowledgeable about IS.		x
Corporate business plan is made available to IS management.	x	
Users participate actively in IS planning.	x	

The six elements which impacted positively on SISP success are as follows. First, 'IS staff are able to keep up with IT advancements'. Here, the banking sector made great efforts for IS staff to keep up with IT advancements through training and education and the banks hired IT expatriates with IT advancement experiences. Second, 'Business goals and objectives are made known to IS management'. For this, the IS management supported the same direction as the business management and this was achieved by IS management attending most of the business meetings and being members of the main

committees in the banks; in addition, some of these IS staff came from business backgrounds.

Third, 'The IS department provides reliable services', where such provision to other departments in banks allowed IS staff to establish relationships with them, solve their problems and understand their needs.

Fourth, 'Business and IS management work together in prioritising applications development' and, consequently, the importance of the applications for the business became a pre-requisite application for other applications, as the applications were requested by government or international institutions.

Fifth, 'Corporate business plan is made available to IS management', and this availability drove the entire bank management in the same direction. This usually involved the arrangement and involvement of IS management during the different stages of the development and implementation of the corporate business plan.

The final finding is 'Users participate actively in IS planning'. Participation assisted the users to understand the IS environment and terminologies and enabled them to transfer their collected facts and data about a subject that was specific to the SISP team.

The only finding which impacts negatively on SISP success is 'The IS department is responsive to user needs'. User needs should be defined carefully because they could include user desires that may not necessarily be 'needs' that would add value to the business; furthermore, by being too responsive, the IS department could actually impact

negatively on SISP success.

7.3.3 Team members of SISP in the banking sector

The statistical analysis results (section 5.7.3) show the six variables of team members of SISP which together influence SISP success in the Saudi banking sector. This provides support for the studies of Gottschalk (1999a, 1999b) and Ray (1999) by referring to the significance of team involvement in the planning process, which is widely expected by both the researchers and the practitioners. This current research has further investigated whether each of these variables affects SISP success in the banking sector and in which direction (positive or negative).

Table 7.6: Team Members of SISP and SISP Success

Team members of SISP elements	Relationship with SISP Success	
	Significant Positive X/Negative(X)	Non-Significant
Team members with high credibility were chosen		x
Team members were chosen on the basis of competency	x	
Teams were drawn from the organisational levels responsible for implementing the plan		x
The planning team was informed about business changes taking place during the strategic planning for information systems		x
IT personnel were trained on organisational objectives and key issues	x	
Team members were briefed about the scope and goals of the project, the organisation's mission and purpose, and its internal and external environments		x

The findings presented in Table 7.6 show that two of the main elements of team members of SISP positively influenced SISP and four had no impact.

The two positive elements will now be discussed. First, 'Team members were chosen on the basis of competency'. When team members were chosen according to certain criteria, such as experience, ability to deal with different opinions and commitment, this took SISP to success. This supports Goodhue et al. (1992), Teo et al. (1997) and Basu et al. (2002), who stated that the team members of SISP should be chosen on the basis of competency rather than availability. The second element is: 'IT personnel were trained on organisational objectives and key issues'. The relevant training helped IT personnel to understand the bank objectives, to know the capability of each employee in each department and to help employees to ask when they have difficulties during developing and implementing SISP. This supports Byrd et al. (1995) and Galliers (1987), who stated that educating IS personnel about organisational objectives and key issues can help, since they can enhance support to users.

7.3.4 Top management commitment to SISP in banking sector

The statistical analysis results (section 5.7.4) show that the five variables concerning the management commitment of SISP together influence SISP success in the Saudi banking sector. This supports the studies of Byrd et al. (1995) which stated that commitment from the top management represents the organisation's support for SISP.

The current research examined whether each of these variables affected SISP success and in which direction (positive/negative). The findings, shown in Table 7.7, indicate that one of the main elements of top management commitment positively influences SISP and four have no impact.

Table 7.7: Top Management Commitment to SISP and SISP Success

Top management commitment elements for SISP	Relationship with SISP Success	
	Significant Positive X/Negative(X)	Non-Significant
A top executive championed SISP process		x
Senior management provided feedback and guidance throughout the process		x
Senior management were briefed throughout the project to ensure their commitment		x
Executives were briefed on the process's scope, objectives, and approaches to obtain their commitment		x
Senior management's key planning issues were determined at the beginning	x	

The only variable with positive impacts on SISP success is 'Senior management's key planning issues were determined at the beginning'. The key issues in the Saudi banking sector were: time, experts, availability of software and hardware, administration issues such as getting approval from other organisations, and budgeting. All were essential for developing and implementing SISP and were therefore discussed at the beginning of SISP by the top management. This supports the studies of Dansker et al. (1987) which stated that the planners determine the senior management's key planning concerns.

7.3.5 Top management support for SISP in banking sector

The statistical analysis results (section 5.7.5) show the eight variables of top management support of SISP which together influence SISP success in the Saudi banking sector. This supports Earl's (1993) study which examined SISP experiences in UK companies and found that top management support was one of the five SISP success factors.

For further exploration, the current research investigated whether each of these variables affects SISP success in the banking sector and in which direction (positive/negative).

The findings, in Table 7.8, show that only one of the main elements of top management support positively influences SISP success and seven have no impact.

Table 7.8: Top Management Support for SISP and SISP Success

Top management support elements for SISP	Relationship with SISP Success	
	Significant Positive X/Negative(X)	Non-Significant
Allocation of sufficient resources		x
Organisational support		x
Reasonable expectations from the management		x
High credibility of leaders and sponsors	x	
Low turnover of key people throughout the project		x
Close management control to resolve conflict among different organisational subunits		x
IS budget allocation is sufficient		x
Top management believes IS plays an important role in the bank's ability to compete		x

The only element which impacts positively on SISP success is 'High credibility of leaders and sponsors'. They are trusted by their subordinates, consultants and other team members, and they need to establish a respected relationship with others which motivates the SISP members to achieve the SISP objectives. In order to improve the process of SISP in the banking sector, the positive elements need to be conducted and the negative ones should be omitted.

7.4 Functions of External Consultants in SISP in Banking Sector

RQ4: *What are the main functions of the external consultant's impact on the success of SISP success in the banking sector?*

The main functions of the external consultant were discussed in Chapter 2 (section 2.4.7), the results of which are shown in Table 7.9. The current research has identified and examined significant relationships for SISP success through the use of ANOVA and

multiple regression analysis techniques; these were explained in Chapter 5 (section 5.8) and confirmed by the interviews in Chapter 6 (section 6.5).

The statistical analysis results (section 5.8) indicated that the nine variables of the external consultant functions together influenced SISP success in the Saudi banking sector. This signifies the importance of the external consultant to SISP. Lederer and Sethi (1996) state that external consultants can provide great value as a source of information about SISP, because they have much experience and have learned from many organisations. This would therefore add more confidence in the validity and reliability of the functions of the external consultant in SISP and its success.

For further investigation and in accordance with the fourth research question, the present research tested whether each of these functions affected SISP success in the banking sector and in which direction (positive/negative). The findings presented in Table 7.9 show that one function positively influences SISP, two have negative impacts and, finally, six have no impact.

The only function which impacts positively on success is 'External consultants transfer technology to our employees'. When the external consultant transfers technology to the bank employees, they explain the bank activities. By sharing knowledge, experience and trust with each other, this creates a fruitful atmosphere for the SISP process. Previously, the transfer of technology was launched through presentations, workshops and on-the-job training. These findings support Richter and Niewiem's (2009) study and the academic literature identifies that the provision of knowledge to clients is regarded as being an important function of the consultants. The current research provides evidence to suggest that this is also true in the SISP field.

The two elements which impacted negatively on SISP success are as follows: firstly, 'The external consultant made many of the major decisions about information systems in the bank'. The bank employees resisted these major decisions when presented by outsiders and some of the decisions might be in favour of the external consultant and not for the needs of business, e.g. the chosen software or hardware may be familiar to the external consultant but not to the employees. Secondly, 'An external consultant was in an advising role and assisted with decisions about the information system only when invited'. This advice would be limited because it would lack understanding of the entire SISP process and the consultant should therefore be a member of the SISP team.

Table 7.9: Functions of external consultants in SISP and SISP Success

Functions of external consultants in SISP	**Relationship with SISP Success**	
	Significant **Positive x/Negative(X)**	**Non-Significant**
External consultants explained the importance of the study		x
External consultants trained bank employees on the methods used		x
External consultants work with bank employees as a team member		x
External consultants transfer technology to the bank employees	x	
External consultants used qualified and experienced people		x
The external consultants provided adequate support to information systems in the bank		x
Management at my bank viewed the external consultant as the leader of the information systems initiative		x
The external consultant made many of the major decisions about information systems in the bank	**(x)**	
An external consultant was in an advising role and only assisted with decisions about the information system when invited	**(x)**	

In order to improve the process of SISP in the banking sector including Saudi one, the positive functions of the external consultant should be developed and improved while the negative ones should be resolved

7.5 SISP External Contextual Factors in Banking Sector

RQ5: *What are the main elements, in terms of the external contextual factors, of SISP which influence its success in the banking sector?*

The main external environments of SISP in the banking sector, as discussed in Chapter 3, are: national culture, government and public organisations, international institutions, competitors and partners.

This research has identified significant relationships between SISP external environments and SISP success using the multiple regression analysis techniques explained in Chapter 5 (section 5.9) and confirmed by the interviews in Chapter 6 (section 6.6).

The findings of the impact of the external environments on SISP success, in accordance with RQ5, will now be discussed.

7.5.1 National culture

The statistical analysis results (section 5.9.1) indicate that the three variables of national culture influence SISP success. This supports the studies of Al-Saggaf (2004) and Al-Saggaf and Williamson (2004) which suggest that religion and culture in Saudi Arabia

not only shape people's attitudes, practices and behaviours, but also the way they see and do things, including the way in which they perceive their lives.

For further exploration, the current research investigated whether each of these variables affects SISP success in the banking sector and in which direction (positive/negative). The findings presented in Table 7.10, show that the main elements of the national culture did not significantly affect SISP success.

Table 7.10: National Culture and SISP Success

National culture	Relationship with SISP Success	
	Significant Positive X/Negative(X)	Non-Significant
Religion		x
Language		x
Male/female separation in work environment		x

SISP is not linked with religion; furthermore, English is the international banking language utilised with the latest technology for communication between males and females in the banking sector in Saudi Arabia. Therefore SISP was introduced successfully without resistance; cultural aspects, such as religion, language and segregation in the working environment had no impact on its success.

7.5.2 Government and Public Organisations

The statistical analysis results (section 5.9.2) show that the four variables of the government and public organisations together influence SISP success. To explore further, the current research investigated whether each of these variables affects SISP success in the banking sector and in which direction (positive/negative).

The findings on the impact of the main elements of the government and public organisations on SISP success in the Saudi banking sector, as shown in Table 7.11, indicate that the Saudi Arabian Monetary Agency (SAMA) impacts positively on SISP success. It convinced the entire banking sector of the importance of SISP in the payment systems. SAMA led the SISP team with the cooperation and participation of the banks and it completely financed the SISP projects, including the payment systems from development to implementation with the expectation of obtaining repayments from these investments from fees for using the payment systems services.

Table 7.11: Government and Public Organisations and SISP Success

Government and Public organisations	Relationship with SISP Success	
	Significant Positive X/Negative(X)	Non-Significant
Ministry of Finance	(x)	
Saudi Arabian Monetary Agency (SAMA)	x	
Saudi Electricity		x
Water Agency		x

In contrast, the Ministry of Finance (MOF) impacts negatively on SISP success: it took too long to make IS decisions and was too conservative in its use of technology in its activities. The question here, is this the case for all Ministries of Finance around the world?

7.5.3 International Institutions

The statistical analysis results (section 5.9.3) show the five variables of the international institutions which together influence SISP success. For further exploration, the current research investigated whether each of these variables affects SISP success in the banking sector and in which direction (positive/negative).

The findings shown in Table 7.12 indicate that three elements of the international institutions significantly and positively influenced SISP success, one had negative impact and one had no impact.

Table 7.12: International Institutions and SISP Success

International Institutions	Relationship with SISP Success	
	Significant Positive X/Negative(X)	Non-Significant
International Monetary Fund (IMF)	x	
The World Bank	(x)	
Society for Worldwide Interbank Financial Telecommunication (SWIFT)	x	
Bank for International Settlements (BIS)		x
Gulf Cooperative Council (GCC)	x	

The first of the three institutions, which impacts positively on SISP success is the International Monetary Fund (IMF). The IMF provides much guidance and it's Committee on Payment and Settlement Systems (CPSS) publishes reference works on payment systems in various countries, widely known as Red Books. The banking sector utilises these when developing and implementing SISP. The second is the Society for Worldwide Interbank Financial Telecommunication (SWIFT). SWIFT shareholders, managers and users are from banks worldwide; it provides a proprietary communications platform, products and services, which allow banks to connect and exchange financial information. The third is the Gulf Cooperative Council (GCC). The GCC formulates similar regulations in various fields, such as: economy and finance, encouraging cooperation of the private sector, strengthening ties between their peoples and establishing a common currency. These objectives help banks in the Gulf area to learn from each other's general banking and, in particular, SISP experiences.

The only finding which impacts negatively on SISP success is The World Bank. Its advisers are experts in economics and statistics, but not in banking and IS. This finding

partly supports Woods (2006) who indicates that The World Bank is run by a small number of economically powerful countries, which choose its leadership and senior management practices; consequently, their interests dominate the bank. But, is this the case for all banking sector around the world?

7.5.4 Competitors

The impact of the main elements of competitors on SISP success, as shown in Table 7.13, indicates that 'foreign banks' is the only competitor, which impacts positively on SISP success. The foreign banks, mainly American and European, are more advanced in the field of SISP. As shown in (section 7.5.1) that the national culture did not significantly affect SISP success and, here, foreign banks impacts positively on SISP success that tells practical and useful theory is accepted even from foreign.

Table 7.13: Competitors and SISP Success

Competitors	**Relationship with SISP success**	
	Significant Positive x/Negative(x)	**Non-Significant**
Insurance Companies		x
Real Estate Offices		x
National Banks		x
Foreign Banks	x	

7.5.5 Partners

The following table, Table 7.14, shows the findings on the impact of the main elements of partners on SISP success, indicating that: 'Central Banks', 'VISA', 'MasterCard (MC)', and 'American Express (AMEX)' have no impacts on SISP success.

Table 7.14: Partners and SISP Success

Partners	Relationship with SISP Success	
	Significant Positive X/Negative(X)	Non-Significant
Central Banks		x
VISA		x
Master Card (MC)		x
American Express (AMEX)		x

SAMA, as a central bank, is advanced in the IS field. The banking sector was aware of VISA, MC, and AMEX software compatibility, hardware applicability and procedures prior to initiating SISP in payment systems.

It is therefore important (see sections 7.5.1 to 7.5.5) to improve the process of SISP in the banking sector and particular consideration should be given to understanding and enhancing the relationships with the positive variables and, at the same time, to resolving the problems that arose with the negative ones.

7.6 SISP Success Measurements in Banking Sector

RQ6: *Which internal and external measurements of SISP impact on its success when utilised in the banking sector?*

As previously discussed in Chapter 2, the two types of success measurement in the Saudi banking sector are external (by the public) and internal (by the bank's management). To develop relationships, this research has identified significant relationships between internal and external measurements of success in the Saudi banking sector and SISP success, using the ANOVA and multiple regression analysis techniques explained in Chapter 5 (section 5.10) and then confirmed by the interviews in Chapter 6 (section 6.7).

In accordance with the sixth research question, the findings on the internal and external measurements of SISP that impact on its success in the banking sector, when used, will now be discussed.

7.6.1 External measurement of SISP success in banking sector

The statistical analysis results (section 5.10.1) indicate that the three variables of the external measurements together influence SISP success in the Saudi banking sector. For further exploration, the current research examined whether each of these variables affected SISP success and whether this effect was positive or negative. The findings show, in Table 7.15, that one variable of the external measurements has significant positive influence on SISP success and one has negative impact.

Table 7.15: External Measurements Elements and SISP Success

External Measurements Elements	Relationship with SISP's success	
	Significant Positive X/Negative(X)	Non-Significant
Cost reduction of the services	(x)	
Improving the services quality to the public	x	
Improving the security		x

The only element with positive impact on SISP success is 'Improving the services' quality to the public'. It sustains bank customers' confidence and is essential for a competitive advantage. On the other hand, 'Cost reduction of the services' has negative impacts on SISP success and is therefore often counter-productive to efficiency.

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7.6.2 Internal measurement of SISP success in banking sector

The statistical analysis results (section 5.10.2) indicate that the three variables of the internal measurements together influence SISP success in the Saudi banking sector. For further exploration, the current research examined whether each of these variables had an effect on SISP success and in which direction (positive/negative). Table 7.16 shows that the only element which impacts positively upon SISP success is 'Improving market share'. This is a strategic, long-term, objective for the banking industry because the real success of SISP as a strategy is to improve market share.

Table 7.16: Internal Measurements Elements and SISP Success

Internal Measurements Elements	Relationship with SISP success	
	Significant Positive X/Negative(X)	Non-Significant
Cost reduction		x
Improving market share	x	
Increasing profit		x

Improving market share and improving the service quality to the public, in the current study, are two benefits of SISP, which cannot be reduced to such simple financial measures as return on investment, payback or internal rate of return, which were mentioned in the studies of Segars and Grover (1998) and Sugumaran and Arogyaswamy (2004).

To improve the process of measuring SISP success in the banking sector: 'Improving the service quality to the public', as an external measure, and 'Improving market share', as an internal measure, could be used.

7.7 Key Stakeholders' Roles in SISP in Banking Sector

RQ7: *Which key stakeholder roles (initiating, leading, involving, time spending and exerting power) impact on the success of SISP in the banking sector?*

The key stakeholders of SISP in the banking sector, as discussed in Chapters 2 and 3, are executives, business user directors and managers, IT directors and managers, and external consultants, and each stakeholder has his/her own role in SISP. In this research these roles are initiating, leading, involving, time spending and exerting power. In order to build on the relationships this research has identified significant relationships between the key stakeholder roles and SISP success using ANOVA and multiple regression analysis techniques, explained in detail in Chapter 5 (section 5.11 and confirmed by the interviews in Chapter 6 (section 6.8).

The current research expands the studies of several authors, including Rouhonen (1991) who found three different stakeholder groups for SISP, including top management, user management, and technology management; and, Drury (1984), Jarvenpaa and Ives (1991), Burn and Szeto (2000) and Warr (2004), who agreed that there are three key stakeholder groups within SISP organisations: IS management, top management and user management. Successful SISP requires sound communication and the interpretation of the different views of these stakeholder groups (Ruohonen, 2002). This research increases the key stakeholder groups for SISP by adding external consultants. This is because external consultants have great value as a source of information about SISP since they have experience and knowledge from many organisations (Lederer and Sethi, 1996). In addition, the consultants apply their worldwide experiences of the banking industry and banking technology to form SISP in the banking sector, as confirmed by the IT directors in the banking sector in Saudi

Arabia. At the same time, this research investigates the relationship between the key stakeholder roles and SISP success in the banking sector. The findings concerning the impact of key stakeholder roles (initiating, leading, involving, time spending and exerting power) on SISP success, in accordance with RQ7, will be discussed in the following sections.

7.7.1 Executives' Roles

The statistical analysis results (section 5.11.1) indicate that four variables of the executives' roles together influence SISP success in the Saudi banking sector. This confirms the studies of Sanders and Courtney (1985), and Grover (2004), which found that top management roles relate positively to SISP success and these roles are essential because of the technological importance and strategic nature of IS. Consequently, this would add more confidence in the validity and reliability of the significance of the top management and their roles in SISP success.

For further exploration and in accordance with the seventh research question, the current research examined whether each of these variables affects SISP success in the banking sector and in which direction (positive/negative). The findings in Table 7.17 show that two variables of the executives' roles have significant positive influences on SISP success, whereas two have no impact.

Table 7.17: Executives' roles and SISP Success

Executives' roles	Relationship with SISP's success	
	Significant Positive X/Negative (X)	Non-Significant
Initiating	x	
Leading		x
Involving	x	
Exerting influence and power		x

The first of the two elements, which impacts positively on SISP success is 'Initiating'. The executives in the banking sector have opportunities, based on their positions, to discuss their experiences and challenges of developing and implementing SISP in their organisations with various experts. They normally understand the entire picture prior to starting and when initiating SISP; they provide full support because it will add value to their achievements and will motivate their subordinates to achieve success. The second element is 'Involving'; the involvement of executives in SISP indicates the importance of SISP for the banking sector and sends a message to the bank employees, generally, and to the SISP team, in particular, that SISP is a critical issue and that they have to achieve it successfully to obtain executives' recognition lately.

7.7.2 Business User Directors' and Managers' Roles

The statistical analysis results (section 5.11.2) indicate that the five variables of roles of business user directors and managers together influence SISP success in the Saudi banking sector. This strengthens what has been frequently argued that participation in the IS plan is very important to its success (Mumford and Weir, 1979; Flechais and Sasse, 2009).

For further exploration and in accordance with the seventh research question, the current research investigated whether each of these variables affects SISP success in the banking sector and in terms of its direction (positive/negative). The findings in Table 7.18 show that the two variables of business user directors' and managers' roles have significantly positive influences on SISP success, whereas three have no impact.

Table 7.18: Business User Directors' and Managers' Roles and SISP Success

Business User Directors' and Managers' Roles	Relationship with SISP success	
	Significant Positive X/Negative(X)	Non-Significant
Initiating	x	
Leading		x
Involving	x	
Time spending		x
Exerting influence and power		x

The first of the two variables with positive impacts on SISP success is 'Initiating'. The business user directors and managers are normally closer to the business needs, so they initiate SISP to assist the bank to achieve its business and, during developing and implementing SISP, proceed as the owners of SISP to drive it to success. The second variable is 'Involving'. As the business user directors and managers are knowledgeable about the details of the business procedures and flows, their involvement in SISP resolves any business-related problems during SISP development and implementation.

7.7.3 IT Directors' and Managers' Roles

The statistical analysis results (section 5.11.3) indicate that the five variables of IT directors' and managers' roles together influence SISP success in the Saudi banking sector. This supports the consistent notion that strategic planning is one of the main concerns of IS executives (Applegate and Elam, 1992; Gottschalk, 1999).

In favour of more investigation and in accordance with RQ7, the current research investigated whether each of these variables affects SISP success in the banking sector and whether this was positive or negative. The findings in Table 7.19 show that two variables concerning the IT directors' and managers' roles have significant and positive influences on SISP success; in contrast, one has negative and two have no impact.

Table 7.19: IT Directors' and Managers' Roles and SISP Success

IT Directors' and Managers' Roles	Relationship with SISP success	
	Significant Positive X/Negative(X)	Non-Significant
Initiating		x
Leading	x	
Involving		x
Spending time	x	
Exerting influence and power	(x)	

The first variable with positive impact on SISP success is 'Leading'. SISP requires leadership by someone such as an IT director who is generally familiar with and confident in technology. IT directors know the nature of the bank business, gained during presentations and through meetings with business directors. Often there is only one IT director at the bank while there are many business directors; it therefore makes it straightforward to choose the IT director to lead SISP and to be accepted and supported by the other business directors. The second variable is 'Spending time'. The IT directors spend time during SISP development and implementation with executives to obtain their vision, with business directors to discuss the business needs, with consultants to review their accomplishments, and with the vendors to discuss the availability and maintainability of their software, hardware and communications in the country. Ultimately, the more time the IT director spends on SISP, the more successful and helpful the impact will be.

The element which has negative impact on SISP success is: 'Exerting influence and power'. IT directors exert influence and power when they do not consider the business needs during the SISP process: they may choose software or hardware because of their familiarity with it, without considering its availability and maintainability. This would generally lead to unsuccessful SISP.

7.7.4 Consultants' Roles

The statistical analysis results (section 5.11.4) indicate that the five variables of the consultants' roles together influence SISP success in the Saudi banking sector. This confirms the study of Lederer and Sethi (1996) which indicated that external consultants have great value as a source of information about SISP because they have experience and knowledge from many organisations.

To investigate further and in accordance with the seventh research question, the current research investigated whether each of these variables affects SISP success in the banking sector and whether this is positive or negative. The findings presented in Table 7.20 show that two variables of the consultants' roles have significant positive influences on SISP success; whereas two have negative impacts and one has no impact.

Table 7.20: Consultants' roles and SISP Success

Consultants' roles	Relationship with SISP Success	
	Significant Positive X/Negative(X)	Non-Significant
Initiating	x	
Leading	(x)	
Involving	x	
Time spending		x
Exerting influence and power	(x)	

There are two variables with positive impacts on SISP success. The first is 'Initiating': when initiating SISP the consultants add value to it in the banking sector and apply their experiences in that sector and in banking technology to form a successful SISP. The second is 'Involving': the consultant's involvement helps to transfer technology and international banking experiences to the SISP team members, assist in foreseeing the

expected difficulties during the SISP process and have the appropriate solutions for them.

The two findings which have negative impacts on SISP success are as follows: firstly, 'Leading', when the consultants lead SISP, the business and IT directors may oppose them because they assume their power is taken from them and the teamwork between the SISP members can decline. Thus, SISP moves in the opposite direction from its success. Secondly, 'Exerting influence and power', where the consultants may exert influence and power on SISP when making decisions for political rather than for professional reasons.

As mentioned in sections 7.7.1 to 7.7.4, the key stakeholders of SISP in the Saudi banking sector are the executives, business user directors and managers, IT directors and managers, and the external consultants. Each stakeholder has his/her own role in SISP and in the direction of improving the process of SISP. The positive roles of stakeholders need to be developed and enhanced, while the negative ones should be removed or corrected.

7.8 SISP Triggers in Banking Sector

RQ8: *Which SISP triggers impact on the success of SISP in the banking sector?*

The SISP triggers discussed in Chapter 2 (section 2.4.10) are examined in the current research and are shown in Table 7.21. As a result, the research has identified significant relationships between SISP triggers and SISP success using ANOVA and the multiple

regression analysis techniques explained in Chapter 5 (section 5.9) and confirmed by the interviews in Chapter 6 (section 6.9).

The statistical analysis results (section 5.12) indicate that the seven variables of SISP triggers together influence SISP success in the Saudi banking sector. This signifies that the main triggers for SISP, as presented by CIO Communication Inc and ICEX Inc (1997), are valid SISP triggers in the Saudi banking sector, thus adding confidence in the validity and reliability of these SISP triggers.

For further investigation and in accordance with the eighth research question, the present research tested whether each of these variables affects SISP success in the banking sector and whether this was positive or negative. The findings in Table 7.21 show that two of the SISP triggers have significantly positive influences on SISP, three have negative impacts and, finally, two have no impact.

Table 7.21: SISP's Triggers and SISP Success

SISP Triggers	Relationship with SISP Success	
	Significant Positive X /Negative (X)	**Non-Significant**
New executive/s been appointed		x
Changes in technology	(x)	
Changes in organisation structure		x
Cost pressures	(x)	
Need to improve IS performance	x	
Changes incorporate business strategy	x	
Failure in last project/s	(x)	

Two of the findings have positive impacts on SISP success. Firstly, 'Need to improve IS performance' as a SISP trigger in banking ensures that the critical applications obtain special consideration for all the hardware and networking responses at practical times.

Poor IS performance can occur as a result of poor user behaviour. Improved IS performance obtained bank employee commitment through participation and education rather than imposing harsh standards and technical lockdowns. So, by emphasising the improvement of IS performance, as a SISP trigger, it had a positive impact on SISP success. This current research extends the CIO Communication Inc and ICEX Inc (1997) study, in which 14% of the respondents identified the need to improve IS performance as the second most important SISP trigger. Consequently, 'The need to improve IS performance' is not only a SISP trigger but it also has a positive impact on its success in the banking sector.

The second finding is 'Changes in corporate business strategy'. Switching from cash to electronic money in the Saudi payment systems was the new corporate business strategy; all of the banking sector's energy was available to achieve this. SISP was developed and implemented to accomplish these changes and it succeeded. The current research expands the same study and found 'Changes in corporate business strategy' was selected as the lowest SISP trigger on the list by less than 5% of respondents. Consequently, 'Changes in corporate business strategy' not only represents a SISP trigger but also positively influences its success in the banking sector.

The first of the three findings, which have negative impacts on SISP success, is 'Changes in technology'. Changes occur frequently in the banking sector and if they are considered as SISP triggers, then SISP will be an endless project. Certainly, the technological direction should be considered when initiating a SISP project and upgrades of hardware and software may be needed whenever necessary. The CIO Communication Inc and ICEX Inc (1997) found changes in technology were selected as

the top SISP trigger by 15% of the respondents; however, it did not investigate the influence of this trigger on SISP success. The current research shows that changes in technology is a SISP trigger which has a negative impact on its success in the banking sector, which is an intensive user of technology.

Secondly, the 'Cost pressures' have a negative impact on SISP success in the current research. The cost pressures impose the selection of some products, such as: hardware, software and training programmes that may be chosen not in relation to quality but based on price. It could also lead to choosing some consultants with limited experience in SISP development and implementation. The cost pressures were not a significant impetus for strategy initiative in the CIO Communication Inc and ICEX Inc study (1997). Accordingly, both studies agreed that the 'cost pressure', as a SISP trigger, is not a significant impetus for strategy proposal.

The final negative impact is 'Failure in last project/s'. Failures remain in the memories of bank employees and can affect their decisions and can even prevent them from performing. Therefore the fear of failure could lead them to make inappropriate decisions, which could take SISP in a negative direction.

To improve the process of SISP in the banking sector, the positive SISP triggers should be utilised as triggers and the negative ones should be rejected.

7.9 Summary

The aim of this chapter was to interpret and discuss the findings generated from the results of the quantitative analysis in Chapters 5 and the qualitative analysis in Chapter

6, with the aim of answering the main research question by answering the eight sub-questions (RQ1-RQ8).

Overall, the findings from RQ1 indicated that at least 17 main objectives of SISP can in fact be applied to the banking sector. The current research condensed and summarised these objectives into five practical and achievable factors specifically for the banking sector. The finding from RQ2 identified significant relationships between the achievement of SISP objectives and SISP success. From the five objectives, there were three which positively influenced the success of SISP, firstly, 'Leading organisational changes', secondly, 'Improving stakeholder involvement and communication', and finally, 'Achieving the strategic priorities'. RQ3 identified significant relationships between SISP success and SISP internal contextual factors including: the availability of business strategy, the alignment of the IS strategy with the business strategy, team members of SISP, management commitment, and management support (governed by eight elements). It indicated the specific elements of these factors which affect the success of SISP, either positively or negatively, in the banking sector.

The findings from RQ4 indicated that one function of the external consultant significantly and positively influenced SISP success: 'External consultants transfer technology to the bank employees' - and two functions impacted negatively on SISP success - 'The external consultant made many of the major decisions about information systems in my bank' and 'An external consultant was in an advising role and assisted with decisions about the information system only when invited'. RQ5 identified significant relationships between the elements of the external contextual factors and the success of SISP. It indicated that SAMA, as a government organisation, the IMF,

SWIFT and GCC, as international institutions, and the foreign banks, as the competitors, positively influenced the success of SISP. In contrast, the Ministry of Finance, a government organisation, and the World Bank, an international institution, both negatively influenced the success of SISP.

The findings from RQ6 indicated improving market share, as the internal measurement of SISP success, and improving the service quality to the public, as the external measurement, while using cost reduction of the services, as the external measurement, of SISP success would lead to negative impacts on SISP success. RQ7 findings clarified the impact of the different roles of the key stakeholders of SISP in the banking sector on the success of SISP. Finally the findings of RQ8 indicate that the positive triggers to the success of SISP are 'Need to improve IS performance' and 'Changes in corporate business strategy', while 'Cost pressures' and 'Failure in last project/s' were negative.

CHAPTER 8
Conclusions and Recommendations

8.1 Introduction

The previous seven chapters presented the research which investigated strategic information systems planning (SISP) in the banking sector. The relevant literature, the results of the data analyses and the discussions of the findings have been presented. Now this chapter summarises the present study (section 8.2) and then focuses on the research outcomes, in relation to the specified research questions (section 8.3). The contributions of the research are presented (section 8.4) and the implications of the study considered (section 8.5). The limitations of the research are examined (section 8.6), as well as suggestions for future research (section 8.7). Finally, in conclusion, a chapter summary is presented (section 8.8).

8.2 Research Summary

The primary objectives of this study, as indicated in section 1.1, were to: identify SISP objectives; investigate SISP internal and external contextual factors; examine the functions of the external consultants' impacts on SISP success; identify measurements of SISP success; explore the key stakeholders' roles in SISP success; and identify the SISP triggers in the banking sector. In order to address these objectives, the thesis was organised into the following chapters.

The first chapter described the objectives of the current study, including the main proposed research question and its eight sub-questions (RQ). The research context, the research significance and the structure of research were also presented.

The second chapter provided a review of the literature and included theoretical and empirical research which related to SISP; SISP objectives; SISP internal contextual factors; external consultant functions; SISP external contextual factors; measurements of SISP success; the key stakeholder roles; and the SISP triggers.

The third chapter introduced selected external contextual factors to SISP in the banking sector; consequently, the chapter linked: national culture; related government and public organisations; connected international institutions; and linked competitors and partners to the banking sector. It also presented an overview of the Saudi banking sector and reviewed the significance of the nation's economy; the importance of information technology to this sector; and the strategic planning capability of information systems to develop and implement its payment systems.

The fourth chapter discussed the research methodology, by looking at: the methodology used; the data collection tools; the characteristics of the sample with consideration of the reliability and validity, and ethics respected in the banking industry.

The fifth chapter concentrated on presenting and discussing a range of statistical analyses, which were generated as the basis for understanding the characteristics and

experiences of IS planning in the responding banks, in order to answer the main research question and the eight sub-questions.

The sixth chapter confirmed and explained the results of the quantitative data analyses from Chapters 5 in further answer to the main and the eight research sub-questions.

The seventh chapter interpreted and discussed the findings generated from the results of the quantitative analyses in Chapters 5 and the qualitative analysis from Chapter 6.

8.3 Research Outcomes

This research focused on SISP and paid specific attention to: SISP objectives; SISP internal contextual factors; external consultant functions; SISP external contextual factors; measurements of SISP success; the key stakeholders' roles; and the triggers, based on their relationship with SISP success, in the banking sector. The aim of the research was to answer the following question: '*How can the process of Strategic Information Systems Planning (SISP) be improved to achieve success in the banking sector?'*, by answering its eight research sub-questions (RQ).

In order to provide answers, data were collected in three phases. The first phase involved an initial study where 13 interviews were held with the IT directors of each bank in the Saudi banking sector; two interviews with the two IT directors at the central bank and one with each of the IT directors from the 11 commercial banks. The outcomes from the first phase informed the development of a survey used in the second phase. The information justified investigating a sample containing a central bank, a

domestic commercial bank and a domestic-foreign commercial bank in order to determine their processes of SISP.

During the second phase, the researcher used a 12 page questionnaire, in nine parts and a five-point Likert scale. The questionnaire was carefully developed by triangulating information from multiple sources to ensure data currency and validity. From the three banks, 157 out of 220 questionnaires were completed and returned from bank executives, business and IT directors, and consultants. The response rate was 71%, which was high, considering the length and complexity of the questionnaire. In the third phase, 57 interviews were held to confirm and explain the quantitative results obtained in the second phase. Thus an in-depth case study was conducted in the three banks during the second and third phases.

The analyses and findings of the current research were addressed in detail throughout Chapters 5, 6 and 7. The findings are summarised against the following research sub-questions.

RQ1: *What are the SISP objectives in the banking sector?*

The findings indicated that at least 17 main objectives of SISP, as defined from different industries and various countries by several authors (section 7.2), can in fact be applied to the Saudi banking sector: a single industry, 'banking', and in only one country, Saudi Arabia.

However, the priorities of these objectives might differ from one industry to another. Earl (1993) found that IS executives ranked the top two planning objectives as: being

the alignment of IS with business strategies, which provides strong support; and the identification of opportunities for IS-based competitive advantage.

In this research (see Table 7.1) 'Aligning the IS with the business needs' was ranked as the first objective of SISP, thus strongly supporting Earl's (1993) theory; however, 'Gain a competitive advantage from IS' was ranked low, in sixteenth place, which differs from his finding.

Furthermore, the current research condensed these 17 objectives and summarised them into five more practical and achievable objectives for the banking sector (see section 5.4.2). The new objectives are: 1) planning and deployment of information systems; 2) leading organisation changes; 3) improving stakeholders' involvement and communication; 4) achieving the strategic priorities; and 5) alignment of organisational policies and architecture for business and IS.

RQ2: *What are the main elements of SISP objectives in the banking sector which, when achieved, influence the success of SISP?*

This research has identified significant relationships between the achievement of SISP objectives and SISP success. From the five new objectives (section 5.4.2), there were three objectives which positively influenced the success of SISP (section 5.6): firstly, 'Leading organisational changes', since change is a fact of business life and the way we adapt to that change can mean the difference between achieving our objectives and falling short; secondly 'Improving stakeholder involvement and communication', which is very important to the success of a system in information system design (Flechais and Sasse, 2009); finally, 'Achieving the strategic priorities' positively

influenced SISP success and helped the banking sector to define which systems, out of all of their payment systems, to start prioritising for change.

RQ3: *What are the main elements, the internal contextual factors, of SISP which affect the success of SISP in the banking sector?*

Researchers are greatly interested in the successful use of SISP (Bajjaly, 1998; Segars et al., 1998). Conceptual and empirical work has been produced suggesting that SISP success is a function of a number of factors. Among them, and observed in the current research in banking sector, are five internal contextual factors (see section 5.7), including: the availability of business strategy (governed by three elements); the alignment of the IS strategy with the business strategy (governed by 12 elements); team members of SISP (governed by six elements); management commitment (governed by five elements); and management support (governed by eight elements). This research indicates that these factors impacted positively on the achievement of SISP objectives, thus supporting the works of Basu et al. (2002); Byrd et al. (1995); Cerpa and Verner (1998); Earl (1993); Cassidy (1998); and Gottschalk (1999).

Furthermore, as previously discussed in section 7.3 and as shown in Table 8.1, the current research indicates the specific elements of these factors which affect the success of SISP, either positively or negatively, in the banking sector.

Table 8.1: Elements of the Internal Contextual Factors Affecting the Success of SISP in the Saudi Banking Sector

SISP's Internal Contextual Factors	Elements which Affect the Success of SISP in the Banking Sector	
	Positive	**Negative**
The availability of business strategy (3 elements).	1. Professional banking staff know the bank business.	
Alignment of IS strategy with the Business strategy (12 elements).	1. IS staff are able to keep up with IT advancements. 2. Business goals and objectives are made known to IS management. 3. The IS department provides reliable services. 4. Business and IS management work together in prioritising applications' development. 5. Corporate business plan is made available to IS management. 6. Users participate actively in IS planning.	1. The IS department is responsive to the user needs.
Team members of SISP (6 elements).	1. Team members were chosen on the basis of competency. 2. IT personnel trained on organisational objectives and key issues.	
Management commitment (5 elements)	1. Senior management's key planning issues determined at the beginning.	
Management support (8 elements).	1. High credibility of leaders and sponsors.	

To improve the process of SISP in the banking sector, the positive elements of the internal contextual factors need to be developed while the negative ones need to be modified or eliminated.

RQ4: *What are the main functions of the external consultant's impact on the success of SISP in the banking sector?*

The external consultants can provide great value as a source of information about SISP because they have much experience and have learned from many organisations (Lederer and Sethi, 1996). Thus banks need to make careful judgements about when and how to use them. In order to make these judgements, the current research firstly indicates in section 7.5 that the nine variables of the external consultant functions, which together influence SISP success, need to be considered. This study differentiated between each

of these nine functions according to their relationship with SISP success (section 7.4). The findings indicated that one function of the external consultant significantly and positively influenced SISP success, two impacted negatively and six had no impact. To illustrate further, 'External consultants transfer technology to the bank employees' was the only finding which impacted positively on SISP success. The two findings which impacted negatively on SISP success were: 'The external consultant made many of the major decisions about information systems in the bank' and 'An external consultant was in an advising role and assisted with decisions about the information system only when invited'.

RQ5: *What are the main elements, in terms of the external contextual factors, of SISP which influence its success in the banking sector?*

The main external contextual factors of SISP in the banking sector including Saudi one, as highlighted in section 7.5, are national culture, government and public organisations, international institutions, competitors and partners.

The current research identified that national culture, which includes religion, language and male/female segregation in the work environment, failed to impact individually on SISP success. Furthermore, the partners contained the Central Banks, Visa Card, MasterCard (MC) and American Express (AMEX), also failed to impact individually on SISP success. On the other hand, as shown in Table 8.2, the current research indicated the elements of these factors which affected the success of SISP, either positively or negatively, in the banking sector.

Table 8.2: Elements of the External Contextual Factors Affecting the Success of SISP in the Banking Sector

SISP's External Contextual Factors	Elements Affecting the Success of SISP in the Banking Sector	
	Positive	**Negative**
Government and Public Organisations	1. Saudi Arabian Monetary Agency (SAMA)	1. Ministry of Finance
International Institutions	1. International Monetary Fund (IMF) 2. Society for Worldwide Interbank Financial Telecommunication (SWIFT) 3. Gulf Cooperative Council (GCC)	1. The World Bank
Competitors	1. Foreign Banks	

In order to improve the process of SISP in the banking sector, the positive elements of the external contextual factors affecting SISP need to be developed and the negative elements need to be eliminated or adjusted.

RQ6: *Which internal and external measurements of SISP impact on its success when utilised in the banking sector?*

The benefits of SISP cannot be reduced purely to simple financial measures, such as the return on investment, payback or internal rate of return (Segars and Grover, 1998; Sugumaran and Arogyaswamy, 2004). This is because SISP, like strategic business planning, produces many difficult-to-assess benefits (King, 1988; King and Graver, 1991); therefore measuring SISP success is complex because it considers these intangibles.

The present research, as highlighted in section 7.6, indicates the variables of internal and external measurements which impacted on SISP success when utilised in the banking sector; these significant relationships which affected SISP success positively and negatively are shown in Table 8.3.

Table 8.3: Variables of the External and Internal Measures of SISP Success

The External and Internal Measures of SISP Success in the Banking Sector	Variables with Significant Relationships with SISP Success	
	Positive	**Negative**
The external measurements of SISP success.	1. Improving the quality of services to the public.	1.Cost reduction of the services.
The internal measurements of SISP success.	1. Improving market share.	

To improve the process of SISP in the banking sector, the positive variables of the external and internal measures of SISP success need to be developed and enhanced while the negative ones need to be removed and corrected.

RQ7: *Which key stakeholder roles (initiating, leading, involving, time spending and exerting power) impact on the success of SISP in the banking sector?*

SISP is not merely a creative process; it is an interactive learning process involving multiple participants and stakeholders (Reponen, 1993). Different stakeholders will have different motivators and reasons for wanting SISP and they may well be seeking different outcomes from the process (Galliers, 1991). The stakeholders may have divergent priorities and goals; however, their complementary skills and knowledge are essential to the success of IS projects. It is thus imperative that relationships among stakeholders are effectively managed to elicit their contribution and cooperation and to facilitate the project's success (Kirsch et al., 2002; Clark et al., 1997; Kirsch, 2004).

The key stakeholders of SISP in the banking sector, as identified in this research, are: executives, business user directors and managers, IT directors and managers and external consultants. Each stakeholder has his/her own role which can affect SISP (see section 7.7). The current research highlights the major roles of the stakeholders and

their respective variables, as presented in section 7.7. These significant relationships had positive and negative affects on SISP success, as summarised in Table 8.4.

Table 8.4: Roles of Stakeholders and their Variables

Roles of the Stake-holders	Variables with Significant Relationships with SISP Success							
	Executives		Business Directors & Managers		IT Directors & Managers		Consultants	
	Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative
Initiating	x		x				x	
Leading					x			x
Involving	x		x				x	
Time spending					x			
Exerting influence and power						x		x

In order to improve the process of SISP in the banking sector, the positive roles of stakeholders need to be developed and enhanced, while the negative roles need to be eliminated and corrected.

RQ8: *Which SISP triggers impact on the success of SISP in the banking sector?*

CIO Communications and ICEX Inc (1997) presented SISP triggers as including: new executive/s being appointed; changes in technology; changes in organisation structure; cost pressures; need to improve IS performance; changes in corporate business strategy; and failures in the last project/s.

The current research proposed, in section 7.8, the impact of these triggers on the success of SISP in the banking sector as summarised in Table 8.5.

Table 8.5: SISP Triggers

SISP Triggers	The Significant Relationship with SISP Success	
	Positive	Negative
Need to improve IS performance	x	
Changes in corporate business strategy	x	
Cost pressures		x
Failure in the last project/s		x

In order to improve the process of SISP in the banking sector, the positive SISP triggers, as shown in the table above, need to be the actual SISP triggers; whereas the negative ones do not.

8.4 Contributions to Knowledge

This area of SISP poses a critical challenge to researchers and executives; the present study therefore contributes in several ways.

First, it confirms that all 17 SISP objectives were compatible with the banking sector including the Saudi one. This supports the previous findings of SISP objectives and provides evidence to suggest that these are the main and universal objectives of SISP. Future researchers may therefore be more confident in the validity and reliability of these objectives and may be more likely to use them.

Second, the study contributed by ranking the SISP objectives according to their importance for the banking sector. This was important because this may differ according to the industry type or the characteristics of the system.

Third, this research reduces the 17 SISP objectives to five clearer objectives, including: 1) planning and deployment of information systems; 2) leading organisational changes; 3) improving stakeholder involvement and communication; 4) achieving strategic priorities; and 5) aligning organisational policies and architecture for business and IS. These five specific objectives are likely to be more practical and achievable for the banking sector.

Fourth, this research has contributed by identifying significant relationships between the achievement of the above five objectives and SISP success. It has also contributed by indicating that the achievement of 'Leading organisational changes', 'Improving stakeholder involvement and communication' and 'Achieving the strategic priorities', all affected SISP success in the banking sector significantly and positively, while the other two objectives did not affect it.

Fifth, the current research confirms that the internal contextual factors, including: the availability of business strategy (governed by three elements); the alignment of IS strategy with the business strategy (governed by 12 elements); team members of SISP (governed by six elements); management commitment (governed by five elements); and management support (governed by eight elements), all impacted on the success of SISP in the banking sector. This supports the previous findings of the internal factors and SISP by providing evidence to suggest that these are the common internal factors of SISP. Future researchers may be more confident in the validity and reliability of these factors and may be more likely to use them. The study also contributed by identifying significant relationships between the elements of the internal contextual factors and the

success of SISP. The elements of the internal contextual factors which affected the success of SISP are presented in Table 8.1.

Sixth, with regard to the function of the external consultant in SISP, the current research contributed by identifying the positive impact of the external consultant, 'External consultants transfer technology to the bank employees' - which affected the success of SISP. The negative impacts were also identified: 'The external consultant made many of the major decisions about information systems in the bank' and 'An external consultant was in an advising role and assisted with decisions about the information system only when invited'.

Seventh, SISP was introduced successfully without resistance; cultural aspects, such as religion, language and segregation in the working environment, had no impact on its success.

Eighth, the current research contributed by identifying significant relationships between the elements of the external contextual factors and the success of SISP. These elements, which affected the success of SISP, are presented in Table 8.2. The study shows that SAMA, as a government organisation, the IMF, SWIFT and GCC, as international institutions, and the foreign banks, as the competitors, positively influenced the success of SISP. However, the Ministry of Finance, a government organisation, and the World Bank, an international institution, both negatively influenced the success of SISP.

Ninth, the present research contributed by defining 'Improving market share' as the internal measurement of SISP success in the banking sector and 'Improving the

service quality to the public' as the external measurement of SISP success. In contrast, using 'Cost reduction of the services' as the external measurement of SISP success would lead to negative impacts on SISP success.

Tenth, this study also contributed by exploring the impact of the different roles of the key stakeholders of SISP in the banking sector on the success of SISP. In order to benefit from SISP, the following were mandatory: 'Initiating' and 'Involving' of the executives and the business directors and managers; 'Leading' and 'Spending time' but not 'Exerting influence and power' of IT directors and managers; and 'Initiating' and 'Involving' but not 'Leading' and 'Exerting influence and power' of the consultants.

Eleventh, the current research contributed by proposing the impact of SISP triggers on the success of SISP in the banking sector. The positive triggers are: 'Need to improve IS performance' and 'Changes in corporate business strategy', while 'Cost pressures' and 'Failure in last project/s' are negative.

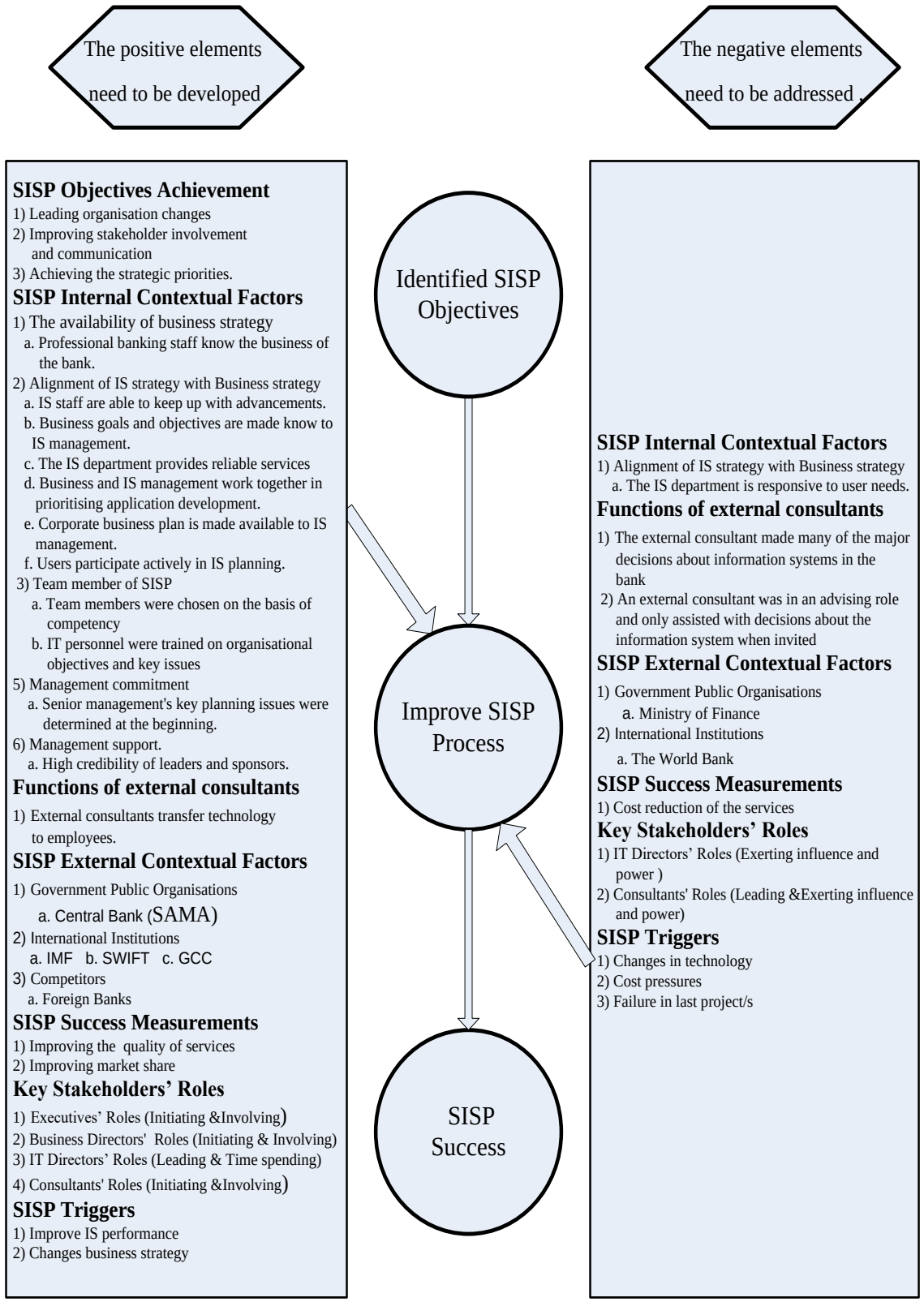
Twelfth, it has been suggested that senior IS managers can provide a broader organisational perspective of IS activities than individual departmental heads who might have more parochial views (Premkumar and King, 1992); several pioneers in SISP followed this suggestion (Lederer and Sethi, 1996; Grover and Lederer, 2004), however, this research contributed by involving executives, business user directors and managers, and consultants to investigate their impact on SISP.

Thirteenth, this study contributed by indicating that informal business strategies could be used to achieve SISP when the business directors and managers fully know the business clearly and they have lengthy experience.

Finally, fourteenth, the IS planners who participated in successful SISP in the banking sector were highly experienced within their organisations, highly experienced in IT and were highly educated.

From the above contributions a model for SISP success in banking sector is initiated in Figure 8.1.

Figure 8.1: Model for SISP Success in Banking Sector



8.5 Implications of the Study

Following on from the contributions to knowledge, the following two sections will address the implications of this study for the world of practice and the literature.

8.5.1 Implications for Practice

The banking sector uses IT extensively. It uses SISP and gains benefits from doing so; these benefits can also be gained by other financial institutions.

According to the *Banker Magazine* (July, 2009), Saudi Arabian banks rank relatively high in comparison to banks in other countries. Other banks should also apply SISP if they are not already doing so.

SISP planners should use the current research as a guideline because it contributes a comprehensive list of 17 SISP objectives, shown in Table 7.1. SISP planners can evaluate each objective and determine which to choose and incorporate for their particular situation. After defining their objectives precisely at the beginning of the process, they should continue to maintain and monitor them carefully during the development and implementation of SISP. This research provides a list of five SISP objectives in Table 7.2, which can be used in the executives' summary.

SISP success is a function of a number of internal contextual factors. The present research contributed by providing a list of elements which affected the success of SISP in the banking sector, as detailed in Table 8.1. SISP planners need to incorporate the positive ones and modify the negative ones.

The current study introduces the notion of the 'External consultants transfer technology to the bank employees', which impacts positively on the success of SISP. Concurrently, the study introduced 'The external consultant made many of the major decisions about information systems in the bank' and 'An external consultant was in an advising role and assisted with decisions about the information system only when invited'. These two external consultant functions impacted negatively on SISP success. Therefore SISP planners need to make careful judgements about when and how to use external consultants in order to balance the positive and negative effects on SISP.

Cultural aspects, including religion, language and segregation in the working environment, had no impact on SISP success; therefore SISP could be introduced in the banking sector throughout the Gulf area, across Arab and Muslim countries, and around the world.

Saudi Arabia's central bank, SAMA, initiated, developed and implemented successful SISP for the payment systems; so other central banks around the world could do the same.

International institutions influence the success of SISP. The IMF, SWIFT and GCC positively influenced the success of SISP in the banking sector; whereas the World Bank had negative impacts. SISP planners in the banking industry should obtain assistance from the international institutions which had a positive impact and they should resolve inconvenience by avoiding those which had a negative impact.

The current research can contribute as guidance to the SISP planners in the banking sector because it identifies 'improving the service quality to the public' as an external measurement of SISP success and 'improving market share' as an internal measurement. Therefore, when utilised in the banking sector, they could impact positively on its success, but 'cost reduction of services' as an external measurement of SISP success was not positive. SISP planners therefore need to accentuate the positive ones and eliminate the negative ones.

As guidance to the SISP planners in the banking sector, this study contributed by exploring the impact of the different roles of the key stakeholders of SISP in the banking sector on the success of SISP. To summarise, the executives could initiate and be involved in SISP projects; business directors and managers could also initiate and be involved in SISP projects; IT directors and managers could lead and spend time, but not exert influence and power in SISP projects; and the consultants could initiate and involve, but not lead and exert influence and power in SISP projects.

8.5.2 Implications for Literature

The current research has contributed to our understanding of the challenges of SISP. Likewise, it suggests several avenues for further research which might be investigated in order to extend its findings. For example, the current research condensed the 17 objectives and summarised them into five (previously mentioned) practical and achievable objectives, specifically for the banking sector, through the use of the exploratory factor analysis (EFA) statistical technique. However, researchers could also apply the confirmatory factor analysis (CFA) technique. EFA examines the relationships between various items on an exploratory basis, without determining the

extent to which the results fit a particular model, whereas CFA compares the solution identified against a hypothetical model (Bryman and Cramer, 2001).

The current research has identified significant relationships between the achievement of SISP objectives and SISP success. The achievement of the five objectives together has influenced SISP success in the Saudi banking sector. These five objectives and their achievement could be examined in different industries and different countries. Furthermore, each of these objectives, when achieved, could be examined in relation to SISP success.

The influence of internal contextual factors on the success of SISP was introduced in Table 8.1. These elements could be tested in another SISP environment, in order to determine whether these elements could be generalised.

The current research has identified that the 'external consultants transfer technology to the bank employees' and this function impacted positively on SISP success. Future researchers could therefore ask the question: 'How can external consultants transfer technology to organisations in order to achieve successful SISP?'

The cultural aspects of religion, language and segregation in the work environment, which are unique cultural aspects in Saudi Arabia, had no impact on the success of SISP. Future researchers could investigate the effects of other cultural aspects, such as dealing with different nationalities.

SAMA, as a central bank, initiated, developed and implemented successful SISP for the payment systems in the Saudi banking sector. Central banks in other countries have rarely managed to accomplish this kind of success. Future researchers could explore different examples in different countries of when the central banks failed to initiate or develop SISP.

A number of international institutions were examined, which influenced the success of SISP in the banking sector, including the IMF, SWIFT and the World Bank. Future researchers could explore other international institutions, which might influence SISP success in other industries, such as in oil or petrochemical companies.

This research identified 'improving the service quality to the public' as an external measurement of SISP success, and 'improving market share' as an internal measurement; when utilised, they impacted positively on the success of SISP. However, 'cost reduction of services' as an external measurement of SISP success, when utilised, impacted negatively on the success of SISP in the banking sector. Therefore there is a need to investigate whether this would be the same in other industries.

This study explored the impact of the different roles of the key stakeholders of SISP in the banking sector, which affected the success of SISP. The results indicated that: executives could initiate and be involved in SISP projects; business directors and managers could initiate and be involved in SISP projects; IT directors and managers could lead and spend time, but not exert influence and power in SISP projects; and consultants could initiate and be involved, but not lead, and exert influence and power in SISP projects. These roles could be tested in other SISP environments in order to assess whether they could be generalised.

8.6 Limitations of the Study

This study has several limitations. Firstly, numerous internal contextual factors could actually influence the success of SISP. However this study did not examine all factors and focused only on the: availability of business strategy; alignment of IS strategy with business strategy; team members of SISP; management commitment; and management support. Future research could therefore address more internal contextual factors.

Secondly, this study examined the main functions of the external consultant and their impact on the success of SISP in the banking sector. This was restricted because it was only from the perspective of the banking sector and did not examine these functions from those of the external consultants' organisations.

Thirdly, several cultural aspects could affect the success of SISP; however, the current research did not examine all aspects and focused solely on religion, language and segregation in the working environment.

Fourthly, the present research found that SAMA, the Saudi central bank, initiated, led, developed, implemented and even financed a successful SISP system, for the payment system; however, it failed to investigate whether there were any alternative ways to make SISP more successful.

Fifthly, the current study examined international institutions, which influenced SISP success, such as the IMF, SWIFT, GCC and the World Bank; however, the research

failed to contact these institutions to obtain their understanding and reactions as to their input to the success of SISP.

8.7 Propositions for Future Research

Future research could examine the relationship between the achievement of the five objectives of SISP and the success of SISP in different situations.

This study examined the following five internal contextual factors in relation to the success of SISP: the availability of business strategy; the alignment of the IS strategy with the business strategy; team members of SISP; management commitment; and management support. In terms of further research, it should address more factors that relate directly to the organisation, such as: trust; cooperation; the internal IS/IT environment; and the organisational structure.

The current research examined the nine functions of the external consultant which together influenced SISP success. Each was differentiated according to its relationship with SISP success (as detailed in section 7.4) and it was found that in order to gain from using external consultants, they must transfer their knowledge and technology to organisations. Further research could investigate when and how that knowledge and technology can be transferred.

This study examined the main functions of the external consultant only in the banking sector and did not examine them from the perspective of the external consultants' organisations. Future research could therefore investigate the impact of the consultant

on the success of SISP by considering the views of some of the consultant organisations such as Anderson, Gartner Group, The Boston Consulting Group or others.

The existing research investigated religion, language and segregation in the working environment as cultural aspects in relation to their impact on the success of SISP. Future research could focus on other cultural aspects including regional or kin-based tribal aspects.

As previously mentioned this study explored SISP in the banking sector, where SAMA, the central bank, initiated, developed and implemented a successful SISP system for the payment systems. Future research could investigate SISP in the banking sector for payment systems which were not initiated or developed by a central bank.

The present research examined the international institutions which influenced the success of SISP, including the IMF, SWIFT, GCC and the World Bank. Future researchers might attempt to understand the reaction of these international institutions and investigate their impacts on the success of SISP through the use of structured interviews in case studies.

The present research contributed by exploring the impact of the different roles of the key stakeholders of SISP in the banking sector on the success of SISP, as follows: executives could initiate and be involved in SISP projects; business directors and managers could initiate and be involved in SISP projects; IT directors and managers could lead and spend time with, but not exert influence and power in SISP projects; and consultants could initiate and be involved in, but not lead, and exert influence and

power in SISP projects. Future research could further test these roles in other SISP environments, in order to attempt to generalise them further.

8.8 Summary

The aim of this chapter was to provide an overall summary and conclusion to the thesis. This chapter started by presenting the main objectives of the study and explained the structure of how the thesis was organised into eight chapters. The outcomes of the research, in accordance with the specified research questions, were explained. The chapter progressed by identifying how the research introduced 14 different contributions to knowledge. The implications of the study for world practice and for literature were then addressed. Finally, the limitations of this study were considered and suggestions were put forward for future research.

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Appendices

Appendix (A) Letters to the Banking Sector Executives

BRADFORD UNIVERSITY School of Management

W Andrew Taylor
BSc MSc PhD CEng FIEE FIQA
Professor of Information Systems,
Associate Dean, Research

WAT/MFJ.013

Tuesday 26 August 2003

Mr Mishari Ibrahim Al Mishari
General Manager
Bank Al-Jazira
Saudi Arabia

Dear Sir

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mohammed Hamed Al-Faidi Al-Juhani is studying for a PhD degree at the University of Bradford-School of Management under my research supervision.

I would be most grateful if you would help him with his research in the subject of "Strategic Planning for Information System in the Banking Sector" and give him access to any staff and information that he requests. I can give you an assurance that all information about your organisation will be treated as strictly confidential. All publications of results will be anonymised to protect the confidentiality and commercial interest of the institution.

Yours faithfully

W A Taylor
Professor of Business Information Systems
and Associate Dean - Research

Emm Lane Bradford West Yorkshire BD9 4JL UK
Tel: +44 (0)1274 234325/234393 Fax: +44 (0)1274 234355/546866 Email: w.a.taylor@bradford.ac.uk www.bradford.ac.uk/management
Dean and Director Professor Arthur Francis BSc(Eng) ACGI CIMgt FBAM

BRADFORD
UNIVERSITY
School of Management

W Andrew Taylor
BSc MSc PhD CEng FIEE FIQA
Professor of Information Systems,
Associate Dean, Research

WAT/MFJ.007

Tuesday 26 August 2003

Mr. Peter Baltussen
Managing Director
The Saudi Holland Bank
Saudi Arabia

Dear Sir

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mohammed Hamed Al-Faidi Al-Juhani is studying for a PhD degree at the University of Bradford-School of Management under my research supervision.

I would be most grateful if you would help him with his research in the subject of "Strategic Planning for Information System in the Banking Sector" and give him access to any staff and information that he requests. I can give you an assurance that all information about your organisation will be treated as strictly confidential. All publications of results will be anonymised to protect the confidentiality and commercial interest of the institution.

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Tel: +44 (0)1274 234325/234393 Fax: +44 (0)1274 234355/546866 Email: w.a.taylor@bradford.ac.uk www.bradford.ac.uk/management
Dean and Director **Professor Arthur Francis** BSc(Eng) ACGI CIMgt FBAM

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BRADFORD
UNIVERSITY
School of Management

W Andrew Taylor
BSc MSc PhD CEng FIEE FIQA
Professor of Information Systems,
Associate Dean, Research

WAT/MFJ.006

Tuesday 26 August 2003

MR. Bertrand Viriot
Managing Director
The Saudi France Bank
Saudi Arabia

Dear Sir

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mohammed Hamed Al-Faidi Al-Juhani is studying for a PhD degree at the University of Bradford-School of Management under my research supervision.

I would be most grateful if you would help him with his research in the subject of "Strategic Planning for Information System in the Banking Sector" and give him access to any staff and information that he requests. I can give you an assurance that all information about your organisation will be treated as strictly confidential. All publications of results will be anonymised to protect the confidentiality and commercial interest of the institution.

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Dean and Director **Professor Arthur Francis** BSc(Eng) ACGI CIMgt FBAM

BRADFORD
UNIVERSITY
School of Management

W Andrew Taylor
BSc MSc PhD CEng FIEE FIQA
Professor of Information Systems,
Associate Dean, Research

WAT/MFJ.010

Tuesday 26 August 2003

Mr. Nemeh Sabbagh
Managing Director
Arab National Bank
Saudi Arabia

Dear Sir

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mohammed Hamed Al-Faidi Al-Juhani is studying for a PhD degree at the University of Bradford-School of Management under my research supervision.

I would be most grateful if you would help him with his research in the subject of "Strategic Planning for Information System in the Banking Sector" and give him access to any staff and information that he requests. I can give you an assurance that all information about your organisation will be treated as strictly confidential. All publications of results will be anonymised to protect the confidentiality and commercial interest of the institution.

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Tel: +44 (0)1274 234325/234393 Fax: +44 (0)1274 234355/546866 Email: w.a.taylor@bradford.ac.uk www.bradford.ac.uk/management
Dean and Director **Professor Arthur Francis** BSc(Eng) ACGI CIMgt FBAM

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BRADFORD
UNIVERSITY
School of Management

W Andrew Taylor
BSc MSc PhD CEng FIEE FIQA
Professor of Operations and
Information Systems
Associate Dean Research

WAT/MFJ.012

Monday 10 January 2005

Mr.Saud Al Saleh,
General Manager.
The Saudi investment bank
Saudi Arabia

Dear Sir

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mohammed Hamed Al-Faidi Al-Juhani is studying for a PhD degree at the University of Bradford-School of Management under my research supervision.

I would be most grateful if you would help him with his research in the subject of "Strategic Planning for Information System in the Banking Sector" and give him access to any staff and information that he requests. I can give you an assurance that all information about your organisation will be treated as strictly confidential. All publications of results will be anonymised to protect the confidentiality and commercial interest of the institution.

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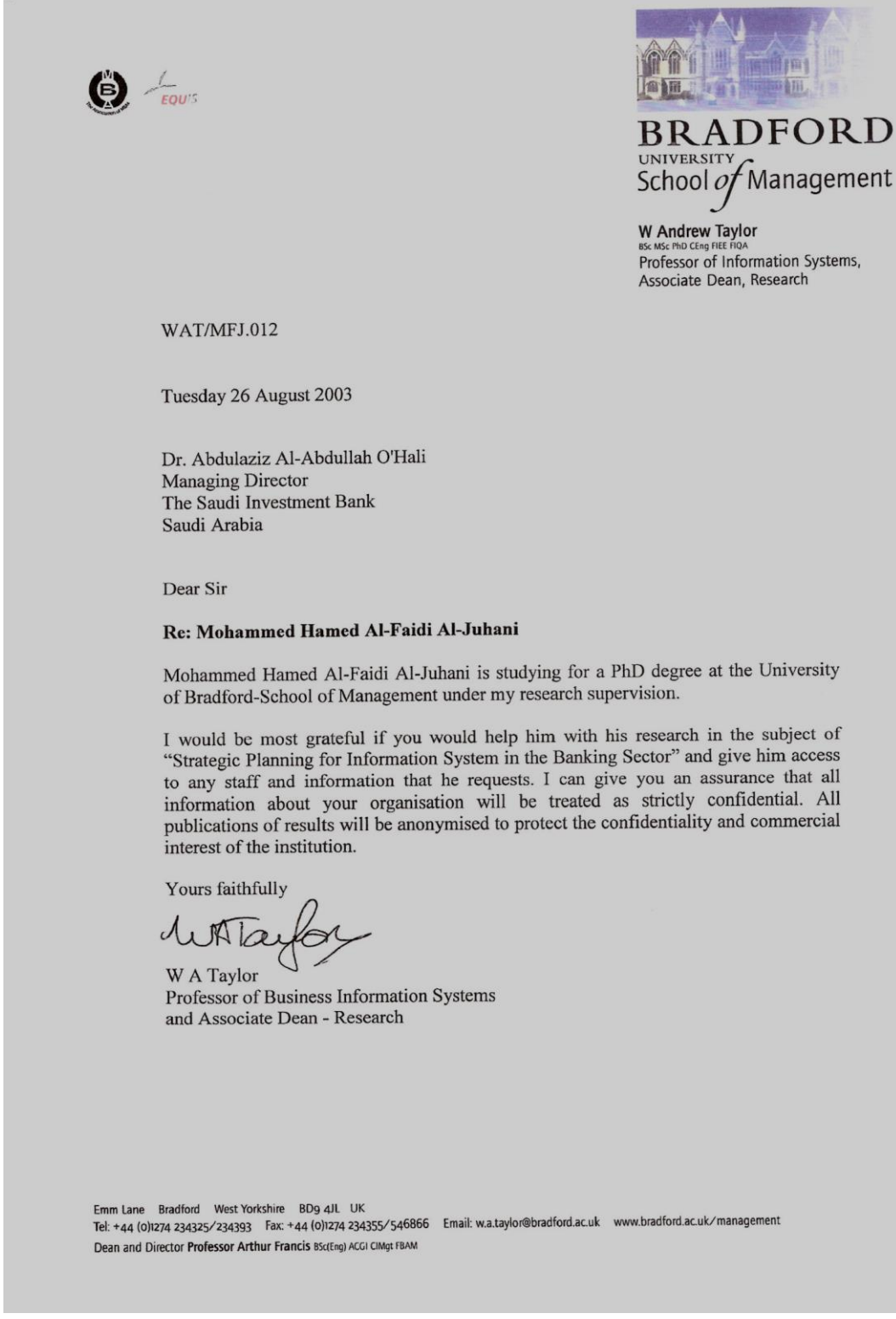
Tel: +44 (0)1274 234325/234393 Fax: +44 (0)1274 234355/546866 Email: w.a.taylor@bradford.ac.uk www.bradford.ac.uk/management



BRADFORD
UNIVERSITY
School of Management

W Andrew Taylor
BSc MSc PhD CEng FIEE FIQA
Professor of Information Systems,
Associate Dean, Research

WAT/MFJ.012

Tuesday 26 August 2003

Dr. Abdulaziz Al-Abdullah O'Hali
Managing Director
The Saudi Investment Bank
Saudi Arabia

Dear Sir

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mohammed Hamed Al-Faidi Al-Juhani is studying for a PhD degree at the University of Bradford-School of Management under my research supervision.

I would be most grateful if you would help him with his research in the subject of "Strategic Planning for Information System in the Banking Sector" and give him access to any staff and information that he requests. I can give you an assurance that all information about your organisation will be treated as strictly confidential. All publications of results will be anonymised to protect the confidentiality and commercial interest of the institution.

Yours faithfully

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Professor of Business Information Systems
and Associate Dean - Research

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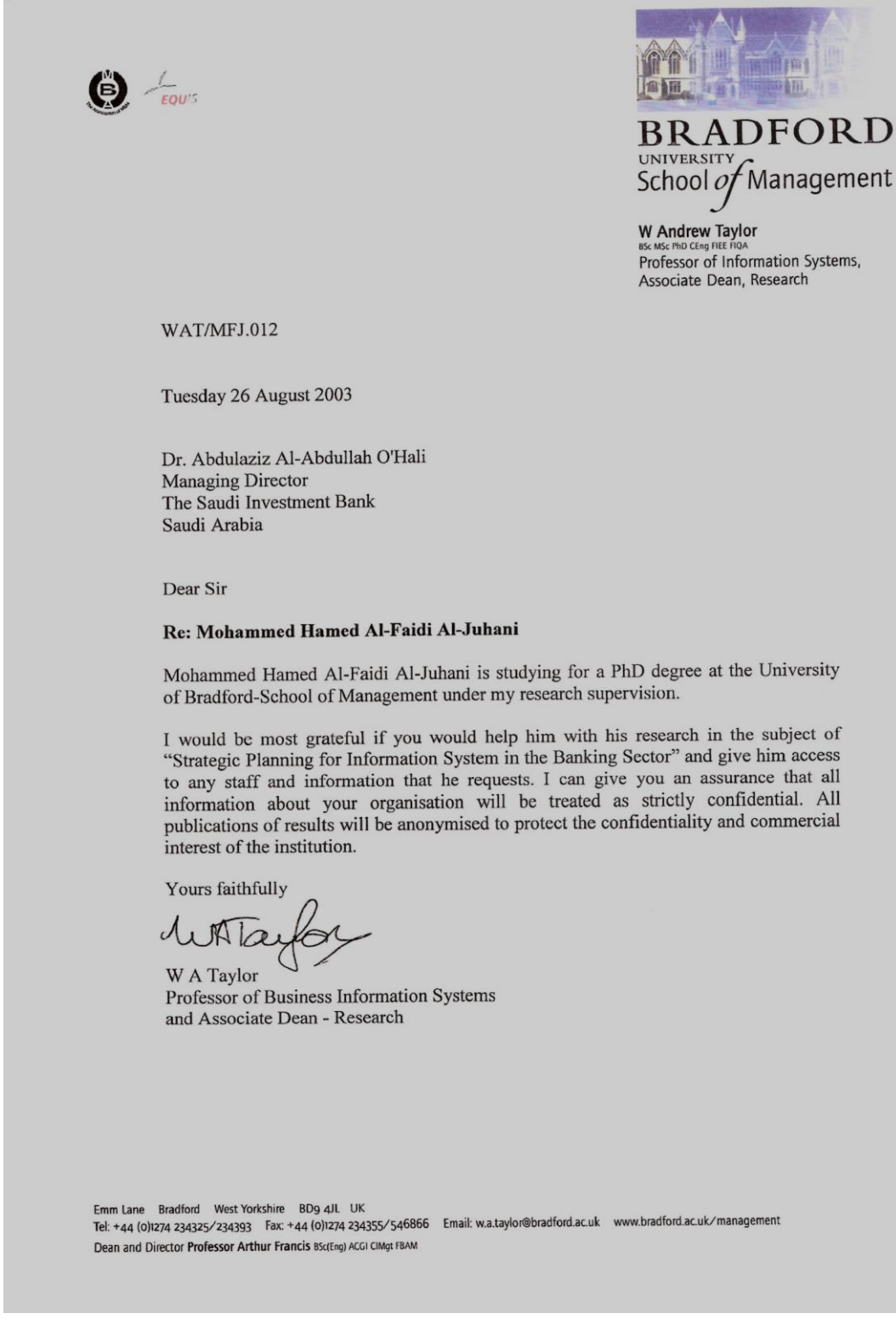

BRADFORD
UNIVERSITY
School of Management

W Andrew Taylor
BSc MSc PhD CEng FIEE FIQA
Professor of Information Systems,
Associate Dean, Research

WAT/MFJ.012

Tuesday 26 August 2003

Dr. Abdulaziz Al-Abdullah O'Hali
Managing Director
The Saudi Investment Bank
Saudi Arabia

Dear Sir

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mohammed Hamed Al-Faidi Al-Juhani is studying for a PhD degree at the University of Bradford-School of Management under my research supervision.

I would be most grateful if you would help him with his research in the subject of "Strategic Planning for Information System in the Banking Sector" and give him access to any staff and information that he requests. I can give you an assurance that all information about your organisation will be treated as strictly confidential. All publications of results will be anonymised to protect the confidentiality and commercial interest of the institution.

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and Associate Dean - Research

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Dean and Director **Professor Arthur Francis** BSc(Eng) ACGI CIMgt FBAM

Appendix (B) Letters to the Banking Sector IT Directors

Saudi Arabian Monetary Agency

Head Office

Banking Technology

VIA FACSIMILE

No. BC/T 1226

14 September 2003

Mr. Demitrios Monos
Saudi American Bank
Phone - 01 404 3867
Fax - 01 404 3709

Dear Mr. Demitrios Monos,

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mr. Mohammed Hamed Al-Faidi Al-Juhani, Director of Government Accounts Department of the Saudi Arabian Monetary Agency is doing a research as part of his Ph. D degree at the University of Bradford in the United Kingdom. The title of his thesis is "Strategic Planning for Information Systems in the Banking Sector".

Mr. Al-Juhani will be contacting you shortly to seek your assistance in obtaining information from your bank relevant to his study.

I appreciate very much if you could assist him with this research.

Best regards,

Ibrahim Al Sayari
Director

Cc: Mohammed Al-Faidi Al-Juhani
Director, Government Accounts

P.O.Box 2992 — Riyadh 11169, Saudi Arabia — Tel : 01 - 441-9413 — Telex 404390 SJ — Fax : 01 - 466-2851

Saudi Arabian Monetary Agency

Head Office

Banking Technology

VIA FACSIMILE

No. BC/T /227

14 September 2003

Mr. Basil Al Karam
Banque Saudi Fransi
Phone - 01 406 5983
Fax - 01 406 6081

Dear Mr. Basil Al Karam,

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mr. Mohammed Hamed Al-Faidi Al-Juhani, Director of Government Accounts Department of the Saudi Arabian Monetary Agency is doing a research as part of his Ph. D degree at the University of Bradford in the United Kingdom. The title of his thesis is "Strategic Planning for Information Systems in the Banking Sector".

Mr. Al-Juhani will be contacting you shortly to seek your assistance in obtaining information from your bank relevant to his study.

I appreciate very much if you could assist him with this research.

Best regards,

Ibrahim Al Sayari
Director

Cc: Mohammed Al-Faidi Al-Juhani
Director, Government Accounts

P.O.Box 2992 — Riyadh 11169, Saudi Arabia — Tel : 01 - 441-9413 — Telex 404390 SJ — Fax : 01 - 466-2851

Saudi Arabian Monetary Agency

Head Office

Banking Technology

VIA FACSIMILE

No. BC/T 1228

14 September 2003

Mr. Sameer Al Sheikh
Saudi Hollandi Bank
Phone - 01 406 7888 x120
Fax - 01 408 2625

Dear Mr. Sameer Al Sheikh,

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mr. Mohammed Hamed Al-Faidi Al-Juhani, Director of Government Accounts Department of the Saudi Arabian Monetary Agency is doing a research as part of his Ph. D degree at the University of Bradford in the United Kingdom. The title of his thesis is "Strategic Planning for Information Systems in the Banking Sector".

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I appreciate very much if you could assist him with this research.

Best regards,

Ibrahim Al Sayari
Director

Cc: Mohammed Al-Faidi Al-Juhani
Director, Government Accounts

P.O.Box 2992 — Riyadh 11169, Saudi Arabia — Tel : 01 - 441-9413 — Telex 404390 SJ — Fax : 01 - 466-2851

Saudi Arabian Monetary Agency

Head Office

Banking Technology

VIA FACSIMILE

No. BC/T 1229

14 September 2003

Mr. David Rifka
Saudi British Bank
Phone - 01 405 0677 x362
Fax - 01 406 8378

Dear Mr. David Rifka,

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mr. Mohammed Hamed Al-Faidi Al-Juhani, Director of Government Accounts Department of the Saudi Arabian Monetary Agency is doing a research as part of his Ph. D degree at the University of Bradford in the United Kingdom. The title of his thesis is "Strategic Planning for Information Systems in the Banking Sector".

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Best regards,

Ibrahim Al Sayari
Director

Cc: Mohammed Al-Faidi Al-Juhani
Director, Government Accounts

P.O.Box 2992 — Riyadh 11169, Saudi Arabia — Tel : 01 - 441-9413 — Telex 404390 SJ — Fax : 01 - 466-2851

Saudi Arabian Monetary Agency

Head Office

Banking Technology

VIA FACSIMILE

No. BC/T 1230

14 September 2003

Mr. Suliman Al Gwaiz
Riyad Bank
Phone - 01 401 0910
Fax - 01 403 0010

Dear Mr. Suliman Al Gwaiz,

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mr. Mohammed Hamed Al-Faidi Al-Juhani, Director of Government Accounts Department of the Saudi Arabian Monetary Agency is doing a research as part of his Ph. D degree at the University of Bradford in the United Kingdom. The title of his thesis is "Strategic Planning for Information Systems in the Banking Sector".

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Ibrahim Al Sayari
Director

Cc: Mohammed Al-Faidi Al-Juhani
Director, Government Accounts

P.O.Box 2992 — Riyadh 11169, Saudi Arabia — Tel : 01 - 441-9413 — Telex 404390 SJ — Fax : 01 - 466-2851

Saudi Arabian Monetary Agency

Head Office

Banking Technology

VIA FACSIMILE

No. BC/T 1231

14 September 2003

Mr. Ziad Tariq Aba-Khail
Bank AlJazirah
Phone - 02 651 8070 x3006
Fax - 02 651 8986

Dear Mr. Ziad Tariq Aba-Khail,

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mr. Mohammed Hamed Al-Faidi Al-Juhani, Director of Government Accounts Department of the Saudi Arabian Monetary Agency is doing a research as part of his Ph. D degree at the University of Bradford in the United Kingdom. The title of his thesis is "Strategic Planning for Information Systems in the Banking Sector".

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Ibrahim Al Sayari
Director

Cc: Mohammed Al-Faidi Al-Juhani
Director, Government Accounts

P.O.Box 2992 — Riyadh 11169, Saudi Arabia — Tel : 01 - 441-9413 — Telex 404390 SJ — Fax : 01 - 466-2851

Saudi Arabian Monetary Agency

Head Office

Banking Technology

VIA FACSIMILE

No. BC/T 1232

14 September 2003

Mr. Saeed Mohammed Al Ghamdi
Al Rajhi Banking & Investment Corp.
Phone - 01 460 1358
Fax - 01 460 1357

Dear Mr. Saeed Mohammed Al Ghamdi,

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mr. Mohammed Hamed Al-Faidi Al-Juhani, Director of Government Accounts Department of the Saudi Arabian Monetary Agency is doing a research as part of his Ph. D degree at the University of Bradford in the United Kingdom. The title of his thesis is "Strategic Planning for Information Systems in the Banking Sector".

Mr. Al-Juhani will be contacting you shortly to seek your assistance in obtaining information from your bank relevant to his study.

I appreciate very much if you could assist him with this research.

Best regards,

Ibrahim Al Sayari
Director

Cc: Mohammed Al-Faidi Al-Juhani
Director, Government Accounts

P.O.Box 2992 — Riyadh 11169, Saudi Arabia — Tel : 01 - 441-9413 — Telex 404390 SJ — Fax : 01 - 466-2851

Saudi Arabian Monetary Agency

Head Office

Banking Technology

VIA FACSIMILE

No. BC/T 1233

14 September 2003

Mr. Taha Al Kuwaiz
The National Commercial Bank
Phone - 02 649 3371
Fax - 02 649 3376

Dear Mr. Taha Al Kuwaiz,

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mr. Mohammed Hamed Al-Faidi Al-Juhani, Director of Government Accounts Department of the Saudi Arabian Monetary Agency is doing a research as part of his Ph. D degree at the University of Bradford in the United Kingdom. The title of his thesis is "Strategic Planning for Information Systems in the Banking Sector".

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I appreciate very much if you could assist him with this research.

Best regards,

Ibrahim Al Sayari
Director

Cc: Mohammed Al-Faidi Al-Juhani
Director, Government Accounts

P.O Box 2992 — Riyadh 11169, Saudi Arabia — Tel : 01 - 441-9413 — Telex 404390 SJ — Fax : 01 - 466-285

Saudi Arabian Monetary Agency

Head Office

Banking Technology

VIA FACSIMILE

No. BC/T 1234

14 September 2003

Mr. Michael Carpenter
Saudi Investment Bank
Phone - 01477 8433
Fax - 01 474 1592

Dear Mr. Michael Carpenter,

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mr. Mohammed Hamed Al-Faidi Al-Juhani, Director of Government Accounts Department of the Saudi Arabian Monetary Agency is doing a research as part of his Ph. D degree at the University of Bradford in the United Kingdom. The title of his thesis is "Strategic Planning for Information Systems in the Banking Sector".

Mr. Al-Juhani will be contacting you shortly to seek your assistance in obtaining information from your bank relevant to his study.

I appreciate very much if you could assist him with this research.

Best regards,

Ibrahim Al Sayari
Director

Cc: Mohammed Al-Faidi Al-Juhani
Director, Government Accounts

P.O.Box 2992 — Riyadh 11169, Saudi Arabia — Tel : 01 - 441-9413 — Telex 404390 SJ — Fax : 01 - 466-2851

Saudi Arabian Monetary Agency

Head Office

Banking Technology

VIA FACSIMILE

No. BC/T 1235

14 September 2003

Mr. Ahmad Hamza Asghan
Arab National Bank
Phone - 01 402 9000 x8226
Fax - 01 402 9111

Dear Mr. Ahmad Hamza Asghan,

Re: Mohammed Hamed Al-Faidi Al-Juhani

Mr. Mohammed Hamed Al-Faidi Al-Juhani, Director of Government Accounts Department of the Saudi Arabian Monetary Agency is doing a research as part of his Ph. D degree at the University of Bradford in the United Kingdom. The title of his thesis is "Strategic Planning for Information Systems in the Banking Sector".

Mr. Al-Juhani will be contacting you shortly to seek your assistance in obtaining information from your bank relevant to his study.

I appreciate very much if you could assist him with this research.

Best regards,

Ibrahim Al Sayari
Director

Cc: Mohammed Al-Faidi Al-Juhani
Director, Government Accounts

P.O.Box 2992 — Riyadh 11169, Saudi Arabia — Tel : 01 - 441-9413 — Telex 404390 SJ — Fax : 01 - 466-2851

Appendix (C)

Researcher's Letter to Banking Sector

MFJ.400

Wednesday 18 June 2003

Mr.
Department
BANK
Saudi Arabia

Dear Sir

Re: Strategic Planning for Information System in the Banking Sector

I am studying for a MPhil degree at the University of Bradford-School of Management under Professor W A Taylor research supervision. My area of research is in the subject of "Strategic Planning for Information System in the Banking Sector".

I would be most grateful if you would answer the attached questionnaire. I can give you an assurance that all information about your organisation will be treated as strictly confidential. All publications of results will be anonymous to protect the confidentiality and commercial interest of the institution.

Yours faithfully

Mohammed Hamed Al-Faidi Al-Juhani
Doctoral Researcher in Strategic
Information Systems Planning

Appendix (D)

Interview Cover Page

INTERVIEW ON STRATEGIC PLANNING FOR INFORMATION SYSTEMS IN BANKING SECTOR

DATE OF INTERVIEW:

INTERVIEWEE:

POSITION TITLE:

ORGANISATION:

YEARS IN BANK:

YEARS IN INDUSTEY:

RESPONSIBILITIES:

ORGANISATIONAL CHART:

Appendix (E)

Unstructured Interviews Questions with IT Directors

Questions:

1. What are the conditions for developing Strategic Information Systems Planning (SISP) in your bank?
2. What are the main objectives in developing an IS strategy?
3. What are the outputs of your IS strategy development?
4. What are the content headings of your IS strategic plan or strategy?
5. What methods have you used in developing your IS strategy; when; why?
6. What have been the benefits of strategic plan or strategic information systems planning?
7. How successful has SISP been? And how would you define success? And how do you measure success?
8. What have you found to be key success factors in SISP?
9. How is your SISP connected to other business planning processes?
10. How do you review your IS strategies?
11. What are the most significant challenges facing the bank from developing and implementing SISP?
12. What factors lead the bank to hire outside consultants to aid in the SIS planning process?
13. Who is responsible for developing and implementing SISP in the banking sector?
14. How to improve SISP process in the bank?
15. How to assess current levels of top management involvement and support in SISP process?
16. How to assess current levels of user management involvement and support in SISP process?
17. In what ways should the SISP process be improved?
18. How to identify the strength and weakness of current SISP process in the bank?

Objectives:

- Improving SISP process in the Banking Sector in Saudi Arabia.
- Assessing current levels of top management involvement and support in SISP process.
- Assessing current levels of user management involvement in SISP process
- Identifying strength and weakness of current SISP process in SAMA and commercial Banks.
- Improving external consultant roles.

[All the above questions are used as a guide when executing the interview]

Appendix (F) Research Questionare

Questionnaire on Strategic Information Systems Planning in The Banking Sector

For the purpose of the survey, the following key definition is used throughout in this questionnaire. In addition, a glossary is attached which defines many of the terms used.

> **Strategic Information Systems Planning (SISP) is the process of identifying a portfolio of computer-based applications that will assist an organisation in executing its business plans and realising its business goals.**

	1) To what extent is each of the following objectives of SISP relevant to your bank? Please tick √ the appropriate response.	**Not at All**	**To a Little Extent**	**To Some Extent**	**To a Great Extent**	**To a Very Great Extent**
1	Identify strategic applications which are helping bank to achieve its goals	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	Align IS with business needs	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	Adopt or match goals of IS to change goals of bank	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	Understand strategic priorities of top management	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	Gain competitive advantage from IS. (e.g. more market share)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6	Increase visibility of IS in organisation	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7	Improve communication about IS with users	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8	Increase top management commitment to IS	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
9	Generate new ideas to reengineer business processes through IS	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
10	Envisage future opportunities and prepare for the future	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
11	Identify IS applications	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
12	Identify new and higher payback applications	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
13	Forecast IS resource requirements	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
14	Allocate IS resources	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
15	Facilitate management and control of IS resources	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
16	Define new business strategies or modify existing ones	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
17	Develop technology policies and architecture	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
18	Other (Please specify): _____ _____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

	2) To what extent have the following SISP objectives been achieved in your bank?	Not at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1	**10.1.1.1** Identify strategic applications which are helping bank to achieve its goals	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	Align IS with business needs	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	Adopt or match goals of IS to change goals of bank	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	Understand strategic priorities of top management	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	Gain competitive advantage from IS. (e.g. more market share)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6	Increase visibility of IS in the organisation	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7	Improve communication about IS with users	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8	Increase top management commitment to IS	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
9	Generate new ideas to reengineer business processes through IS	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
10	Envisage future opportunities and prepare for future	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
11	Identify IS applications	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
12	Identify new and higher payback applications	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
13	Forecast IS resource requirements	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
14	**10.1.1.2** Allocate IS resources	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
15	Facilitate management and control of IS resources	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
16	Define new business strategies or modify existing ones	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
17	Develop technology policies and architecture.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
18	Other (Please specify): _____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

3) Overall, to what extent has SISP been successful in your bank?	Not at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

	4) What methods have you followed to support IS strategy and Business strategy in your bank, and when? Please tick √		Year
1	Method for IS strategy Product……_Vendor……..	☐	
2	In-house IS strategy**(Written and Documented)**	☐	
3	In-house business strategy**(Written and Documented)**	☐	
4	Informal IS strategy**(Only in people's heads- Unwritten)**	☐	
5	Informal business strategy**(Only in people's heads- Unwritten)**	☐	
6	Others (Please specify): _____ _____	☐	

	5) How long does development of SISP take in your bank? Please tick √ only one.	
1	3-6 months	☐
2	6-9 months	☐
3	9-12 months	☐
4	More than 12 months.	☐

	6) To what extent do you agree with the following statements in relation to achieving your bank's business?	Not at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1	**10.1.1.3** Professional banking staff know the business of bank	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	Professional banking staff are aware of bank's partners	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	Professional banking staff are aware of bank's competitors	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	Bank's procedures and work- flow are clear	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

7) To what extent do you agree with the following statements about your bank?		Not at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1	IS staff are able to keep up with IT advancements	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	Business goals and objectives are made known to IS management	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	IS department is responsive to user needs.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	IS management is knowledgeable about business.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	Top management has confidence in IS department.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6	IS department provides efficient services.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7	IS department provides reliable services.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8	There is frequent communication between users and IS department.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
9	Business and IS management work together in prioritising applications development.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
10	Top management is knowledgeable about IS.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
11	Corporate business plan is made available to IS management.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
12	Users participate actively in IS planning.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

8) Did you use external consultants in developing or/and implementing SISP in your bank? If the answer is YES, please go to Question 9

If NO, please tick √ the applicable reason below:

1	External consultants are too expensive	☐
2	External consultants do not understand our business	☐
3	External consultants are used only to support top management decisions	☐
4	Any other reasons (Please specify):	

9) To what extent do you agree with the following statements about the role of the external consultant at your bank?		**Not at All**	**To a Little Extent**	**To Some Extent**	**To a Great Extent**	**To a Very Great Extent**
1	External consultant explained importance of the study	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	External consultant trained our employees on the methods used	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	External consultant worked with our employees as a team member	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	External consultant transferred technology to our employees	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	External consultant used qualified and experienced people	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6	External consultant provided adequate support to information systems in my bank	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7	Management at my bank viewed the external consultant as the leader of the information systems initiative	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8	External consultant made many of the major decisions about information systems in my bank	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
9	External consultant was in an advisory role and assisted with decisions about IS only when invited	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
10	External consultant played a role in decision making about information systems in my bank (Please specify):	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

10) From your experience with SISP in your bank, to what extent do you agree with the following statements?		**Not at All**	**To a Little Extent**	**To Some Extent**	**To a Great Extent**	**To a Very Great Extent**
1	Team members with high credibility were chosen	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	Team members were chosen on the basis of competency	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	Teams were drawn from the organisational levels responsible for implementing the plan	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	Planning team was informed about business changes taking place during the SISP	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	IT personnel were trained on organisational objectives and key issues	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6	Team members were briefed about the scope and goals of the project, the organisation's mission and purpose, and its internal and external environments	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

11) To what extent are the following Top Management roles in the process of SISP important in your bank?		Not at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1	Top executive championed SISP process	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	Senior management provided feedback and guidance throughout the process	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	Senior management were briefed throughout the project to ensure their commitment	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	Executives were briefed on the process's scope, objectives and approaches to obtain their commitment	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	Senior management's key planning issues were determined at the beginning	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

12) To what extent are these factors important in relation to your bank's SISP?		Not at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1	Allocation of sufficient resources	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	Organisational support	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	Reasonable expectations from management	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	High credibility of leaders and sponsors	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	Low turnover of key people throughout the project	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6	Close management control to resolve conflict among different organisational subunits	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7	IS budget allocation is sufficient	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8	Top management believes IS plays an important role in bank's ability to compete	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Your comments on any aspect of SISP will be welcome.

_____

_____

_____

_____

_____

13) To what extent do the following external environments influence SISP relevant to your bank? Please tick √ the appropriate responses.		**Not at All**	**To a Little Extent**	**To Some Extent**	**To a Great Extent**	**To a Very Great Extent**
1	National Culture					
	a) Religion	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	b) Language	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	c) Male/female separation in work environment	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	d) _____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	**Government and public organisations**					
	a) Ministry of Finance.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	b) Ministry of Interior.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	c) Saudi Arabian Monetary Agency (SAMA).	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	d) Saudi Telecommunications Company (STC).	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	e) Saudi Electric.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	f) Water Agency.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	g) Others (Please specify): _____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	_____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	**International Institutions**					
	a) International Monetary Fund (IMF)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	b) The World Bank	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	c) Society for Worldwide Interbank Financial Telecommunication (SWIFT)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	d) Bank for International Settlement (IBS)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	e) Gulf Cooperative Council (GCC)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	f) Others (Please specify): _____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	**Competitors**					
	a) Insurance Companies.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	b) Real Estate Offices.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	c) National Banks.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	d) Foreign Banks.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	e) Others (Please specify): _____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	_____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	**Partners**					
	a)Central Bank	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	b)VISA	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	c)Master Card (MC)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	d)American Express (AMEX)	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
	e) Others (Please specify): _____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
		☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6	**Other external environments (Please specify):**	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

14) To what extent are the following external measurements of SISP success relevant to your bank? (Please tick √)	Not at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1 Cost reduction of services	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2 Improving services quality to the public	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3 Improving security	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4 Others (Please specify): _____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
_____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
_____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
_____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
_____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

15) To what extent are the following internal measurements of SISP success relevant to your bank? (Please tick √)	Not at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1 Cost reduction	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2 Improving market share	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3 Increasing profit	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4 Others (Please specify): _____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
_____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
_____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
_____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

16) To what extent are the following initiators of SISP relevant to your bank? (Please tick √)	Not at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1 Executives	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2 Business user directors and managers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3 IT directors and managers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4 Consultants	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5 Others (Please specify): _____	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
_____					

17) To what extent are the following leaders of SISP project in your bank? (Please tick √)		Not at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1	Executives	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	Business user directors and managers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	IT directors and managers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	Consultants	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	Others (Please specify): _____ _____	☐ 1 ☐ 1	☐ 2 ☐ 2	☐ 3 ☐ 3	☐ 4 ☐ 4	☐ 5 ☐ 5

18) To what extent are the following different stakeholders who are involved in SISP in your bank? (Please tick √)		Not at All	To a Little Extent	To Some Extent	To a Great Extent	To a Very Great Extent
1	Executives	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	Business user directors and managers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	IT directors and managers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	Consultants	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	Others (Please specify): _____ _____	☐ 1 ☐ 1	☐ 2 ☐ 2	☐ 3 ☐ 3	☐ 4 ☐ 4	☐ 5 ☐ 5

19) To what extent does each participant spend working time on SISP project in your bank? (Please tick √)		0% to 20%	21% to 40%	41% to 60%	61% to 80%	81% to 100%
1	Executives	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	Business user directors and managers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	IT directors and managers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	Consultants	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	Others (Please specify): _____ _____	☐ 1 ☐ 1	☐ 2 ☐ 2	☐ 3 ☐ 3	☐ 4 ☐ 4	☐ 5 ☐ 5

	20) To what extent do the following stakeholders have influence and power over SISP in your bank? (Please tick √)	**Not at All**	**To a Little Extent**	**To Some Extent**	**To a Great Extent**	**To a Very Great Extent**
1	Executives	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	Business user directors and managers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	IT directors and managers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	Consultants	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	Others who have influence and power over SISP (Please specify): _____ _____	☐ 1 ☐ 1	☐ 2 ☐ 2	☐ 3 ☐ 3	☐ 4 ☐ 4	☐ 5 ☐ 5

	21) To what extent are the following Triggers or initiators of the need for SISP in your bank? (Please tick √)	**Not at All**	**To a Little Extent**	**To Some Extent**	**To a Great Extent**	**To a Very Great Extent**
1	New executive/s appointed	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	Changes in technology	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	Changes in organisation structure	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
4	Cost pressures	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	Need to improve IS performance	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
6	Changes incorporate business strategy	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
7	Failure in the last project/s	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8	No specific reason; we have always done it	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
9	Others (Please specify): _____ _____ _____ _____ _____	☐ 1 ☐ 1 ☐ 1 ☐ 1 ☐ 1 ☐ 1	☐ 2 ☐ 2 ☐ 2 ☐ 2 ☐ 2 ☐ 2	☐ 3 ☐ 3 ☐ 3 ☐ 3 ☐ 3 ☐ 3	☐ 4 ☐ 4 ☐ 4 ☐ 4 ☐ 4 ☐ 4	☐ 5 ☐ 5 ☐ 5 ☐ 5 ☐ 5 ☐ 5

22)General Information on Participant and Bank

1. Your job title and to whom you report:

_____

_____

2. Number of years' experience in your bank_____

3. Number of years' experience in Information Technology (IT):

_____

4. Your level of education:

☐ High School Diploma
☐ 2-Year College Graduate
☐ 4-5 Year College Graduate
☐Some Postgraduate
☐Postgraduate Degree
☐ Other(please specify)_____

5.Best description of your activity in the bank:

☐ Central Bank Activities
☐ Business Banking
☐ Personal Banking
☐ Islamic Banking
☐ Women's Banking
☐ Other(please specify)_____

6.Which of the following applications are directly related to your work (Please tick)

☐ MIS ☐ SARIE ☐ TADAWUL
☐ SPAN ☐ SADAD ☐INTERNET BANKING
☐TELEPHONE BANKING
☐COMMERCIAL BANKING
☐ Other(please specify)_____

If you are using more than one application, please explain:

_____

7. Approximate number and IT:

☐ Number of bank employees_____

☐Number of IT employees_____

8 .The approximate annual IT budget: (SR)

☐ From 20,000,000 to 40,000,000
☐ From 40,000,000 to 75,000,000
☐ From 75,000,000 to 150,000,000
☐ From 150,000,000 to 300,000,000
☐ From 600,000,000 to 1,200,000,000

9. My bank is:

☐ Central Bank
☐ Saudi Commercial Bank
☐Saudi-Foreign Commercial Bank
☐Other(please specify)

_____

10. What is your best estimate of the cost (SR) of your most recent IS strategy?

☐ Less than 1000,000
☐ From 1,000,000 to 2,000,000
☐ From 2,000,000 to 3,000,000
☐ From 3,000,000 to 4,000,000
☐ From 5,000,000 to 6,000,000
☐ From 6,000,000 to 7,000,000
☐ More than 7,000,000

Pease do not hesitate to contact me to answer any questions you might have.

Telephone number: 00966-1-4662555 (In Saudi Arabia) - 0044-1274-481414 (In UK)

Thank you very much for your time and help!

Please use the enclosed envelope to return this questionnaire

If you want a summary of the results, please do one of the following:

1-Write your name and address below, or
2-Insert your business card in the return envelope, or
3-Mail a separate request to

Mohammed Al-Faidi Al-Juhani, Doctoral Researcher in Strategic Information Systems, School of Management, Bradford University, Emm Lane, Bradford BD9 4JL UK, or

Email a request to him at: m.al-faidi@bradford.ac.uk

Appendix (G)

Individual Profile of Interviewee

NAME:……

POSITION TITLE:……

REPORTING TO:……

ORGANISATION:……

DEPARTMENT:……

YEARS IN BANK:……

YEARS IN BANKING INDUSTERY:……

YEARS IN NON-BANKING INDUSTERY (WHAT):……

YEARS IN IT INDUSTERY:……

EDUCATION:…… ……

TRAINING (HOW LONG):……(WHERE):……

EXPERIENCE (WHERE):……

NATIONALITY:……(WHICH PART):……

AGE:……SEX:……

PERSONALATY:……

INTEREST:……

CLOSEST FRIEND:……

RESPONSIBILITIES:……

POLITICAL ASPIRATION:……

OTHER INFORMATION:……

Appendix (H)

Semi-structured Interviews Questions in the Three Banks

Part 1:

1. What business are you in?
2. What are the requirements for achieving this business?
3. How could you get these requirements?
4. Who are your competitors?
5. How are you dealing with them?
6. Who are your partners?
7. How are you dealing with them?
8. Why are you using technologies in your bank?
9. How are you using technologies in your bank?
10. Do technologies helping in achieving your objectives on time? How have they done that?
11. Do the IS employees understand the business of the bank? How?
12. Is there a frequent communication between the business directors and IS director? How frequent?
13. Do the business directors share in making decisions for the IS department? How?
14. Are the goals of the bank clear to the IS management? How fast do the IS management respond to changing goals of the bank that may occur (e.g.)?
15. Are the bank business plans made available to IS management? If yes, how? If no, why?
16. Have you gained any competitive advantages over your competitors from using IS? If yes what and how? If no, why?
17. Have you improved the business by using IS? What and how (yes)? Why (no)?
18. Have you improve the quality of the services from using IS? What and how (yes)? Why (no)?
19. Are you using IS in all your transactions? If no, why?
20. Does IS management participate in the main committees of the bank? How (yes)? Why (no)?
21. Are the users of the applications participating from the initial study until accepting these applications? How (yes)? Why (no)?
22. How do you train your users for new applications?
23. Who generally initiates the need for a new application or enhancing it? How?
24. Why do you evaluate the IS department? Please elaborate.
25. How do you agree and approve IS department requirements?
26. Has the use of IS required a change in the business processes? How?
27. What examples can you give that the use of IS is helping in envisaging the future opportunities and preparing for the future? Explain how.
28. What applications have been identified by the IS department? How?
29. Has any new and higher payback applications been identified? How?
30. How would you forecast IS resource requirements in the bank?
31. How would you allocate your IS resources in the bank? How many IT departments are there in the bank? And if more than one, why?
32. How would you control your IS resources in the bank? Any examples?
33. Has IS defined new business strategies or modified the existing ones? How?

34. How do you develop your IT infrastructure?
35. How do you develop your IS policies and procedures?

Part 2:

1. What are the content headings of your IS strategic plan and your business strategy?
2. What are the outputs of your IS strategy)?
3. What methods have you used in developing your IS strategy? Why did you choose these methods?
4. When did you develop, for the first time, your IS strategic plan? Is it different from now? How?
5. How long normally does IS strategic plan development take? Is it long/short/just fine for meeting the business requirements?
6. How do you identify the strength and weakness of the IS strategic plan in the bank?
7. How to improve the IS strategic plan in the bank?
8. Did (at least the first time)/Do you use consultants in developing your IS strategic plan? Why?
9. How did you choose your consultants?
10. Did you hire your consultants as a permanent employee for the bank or just contract him for a period of time? Why?
11. Who is/are executing the IS strategic plan? How?
12. Who is/are maintaining (updating) the IS strategic plan? How?
13. Who is/are reviewing the IS strategic plan? How?
14. What factors do you think are behind the success of your IS strategy? Why?
15. In your experience, did you meet any failure? What factors were behind that? Why?

Part 3:

1. What are the main external environments (e.g. cultures, governments organisations, international institutions, competitors….) that your business decisions affected or are affected by them? How?
2. How external environment does measure your success?
3. What are the main internal environments (e.g. org chart, procedures….) that your IS decisions affected or are affected by them? How?
4. How internal environment does measure your success?
5. What is your involvement in IS strategic plan? Why have you been chosen?
6. Who is the initiator/s of the IS strategic plan? How? Why?
7. What is your input to the IS strategic plan? Why?
8. What is the initiation of the need for an IS strategic plan? And by whom?
9. How often do you meet with your boss (top mgt.), business directors, and IS directors?
10. How long do you have to wait to see your boss (top mgt.), business directors and IS directors?
11. How long do you have to wait to phone your boss (top mgt.), business directors and IS directors?
12. How often do you get an invitation from your boss (top mgt.), business directors and IS directors?
13. How often you participate in the IS strategic plan decisions and business plan?
14. How long does it take to get an approval from top management?
15. How often your suggestions and recommendations accepted by your boss (top mgt.), are business directors and IS directors? Why?

(All the above questions are used as a guide when executing the interview)